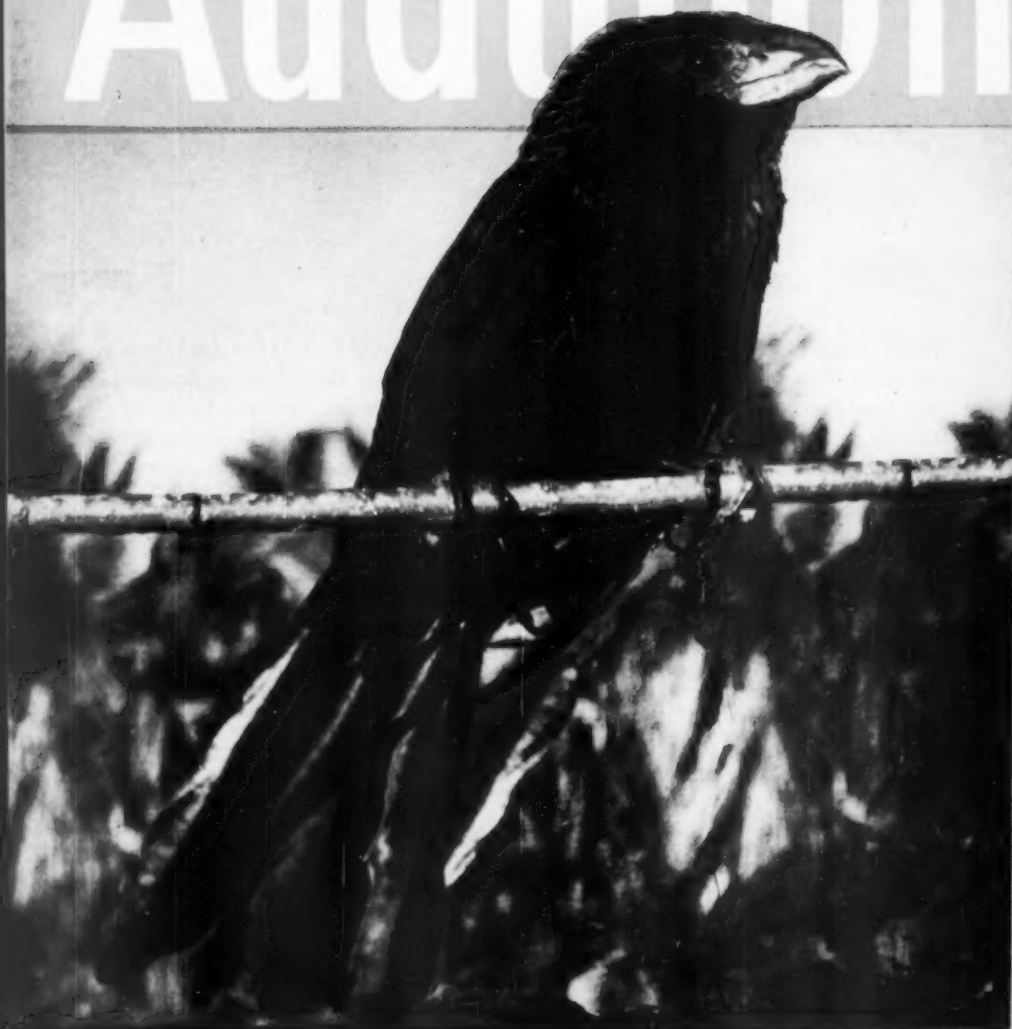


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AUDUBON SHRINE (P. 218)

Audubon



magazine

JULY-AUGUST 1951

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CONTENTS FOR JULY-AUGUST 1951

LETTERS	208
THE FLAMINGOS OF INAGUA, Robert P. Allen	210
QUESTIONS NATURE STYLE, Tamara Andreeva	217
SANCTUARY ON THE PERKIOMEN, George Dock, Jr.	218
LITTLE ORPHAN ANI, Jack H. Merritt	224
NATURE IN THE NEWS	230
HUMMINGBIRD WAYS, Robert S. Woods	232
MYTH-INFORMATION, Lewis Wayne Walker	237
THE AUDUBON CENTENNIAL STAMPS	238
BIRD FINDING IN TENNESSEE, Olin Sewall Pettingill, Jr.	240
THE AUDUBON SISTERS, Leonora Sill Ashton	244
THE PHOTOGRAPHY OF BIRDS, G. K. Yeates	248
NEWS OF WILDLIFE AND CONSERVATION, John H. Baker	255
AUDUBON GUIDE TO BIRD ATTRACTING	260
BOOK NOTES, John K. Terres	266



COVER: Photograph of smooth-billed ani by Leslie M. Weetman. This curious member of the cuckoo family nests singly, and in colonies, in its native tropical home; eggs vary from four or five to 20 or more, depending on the number of females laying in a nest. It roosts huddled together on a branch and alternately flaps and sails in a straight line from tree to tree, like the Canada and Florida jays.

• • •

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Letters

Bald Eagle Nesting Failures Continue

My eagle banding in Florida for the 1951 season was no better than 1950 when I reported a 77 per cent nesting failure, and was able to band only 25 birds.*

This 1951 season, out of 82 nests under observation, only 20 produced young and I banded only 24, a nesting failure of 78 per cent.

In my article, "*The Plight of the Florida Bald Eagle*," *Audubon Magazine*, Jan.-Feb. 1950, I explained that hurricanes play havoc with the nesting and also that the birds seem unable to carry on in excessively hot weather in the South. When I arrived in Florida about the end of November 1950, all indications pointed to a very cool season, which was the case, and I thought it would be an excellent season for eagle incubation, until I learned that Florida experienced a fairly bad hurricane in mid-October and I immediately predicted a poor bald eagle nesting season.

On the way north this past April of 1951, I talked with W. Bryant Tyrrell, who has long studied the bald eagles nesting around Chesapeake Bay. He told me that he had not found one active nest this season and was disturbed over the situation. It recently occurred to me that the cause for this may have been the very bad storm of November 25, 1950 on the Atlantic coast. This would be about four weeks before the Maryland eagles would be due to lay and if the Florida birds are upset by hurricanes, why not the Maryland birds?

Around Delta, Ontario, where I usually have some 12 active nests under observation, I hoped to find better nesting conditions than in Florida but I am sorry to say that only one nest appears to have young in it. Here, I think the muskrat trappers disturbed the eagles in March, keeping them off their eggs in cold weather for possibly most of the day while working at their traps. Nearly all my nests are in the immense soft elms growing in lowlands close to the lakes and good muskrat territory.

So, from Florida to Ontario, the nesting failure of the bald eagle is very discouraging.

CHARLES L. BROLEY

Delta, Ontario
Canada

* See *Audubon Magazine*, May-June 1950, pp. 139-141; March-April 1951 issue, pp. 72, 136.

Letters continued on Page 270

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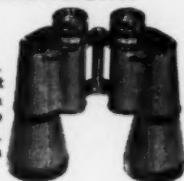
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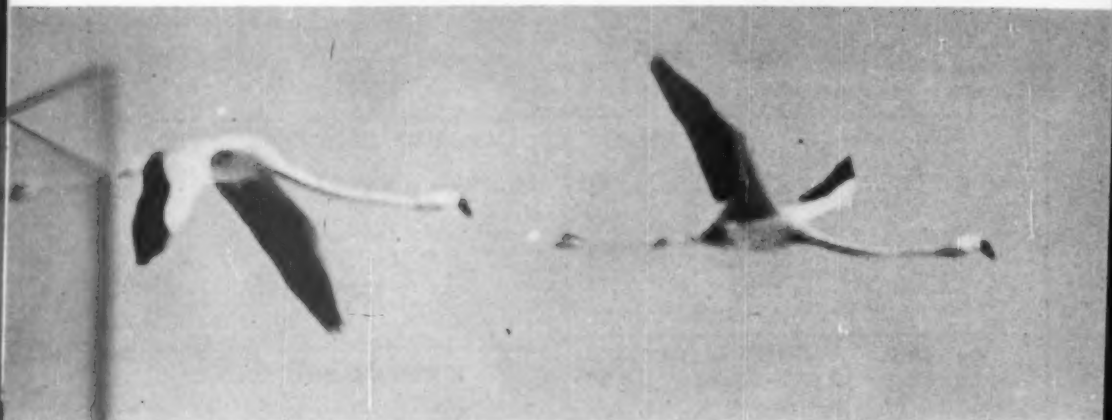


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THE *Flamingos* OF



All photographs by Stephen F. Briggs, unless otherwise indicated.

By Robert P. Allen*

WE had been working our way towards the eastern end of Lake Windsor, on the island of Great Inagua, alternately poling and pushing our skiff for nearly 10 miles, and we had not seen a flamingo. Sammy Nixon, my native guide, began to show concern. He had assured me back in Matthewtown, the little settlement on Inagua, that he knew where the big flock would be located. "Should be hereabouts," he grumbled, scratching his head under the well ventilated brim of his Bahamian straw. At almost that instant, we heard a faint and indistinct hum of sound.

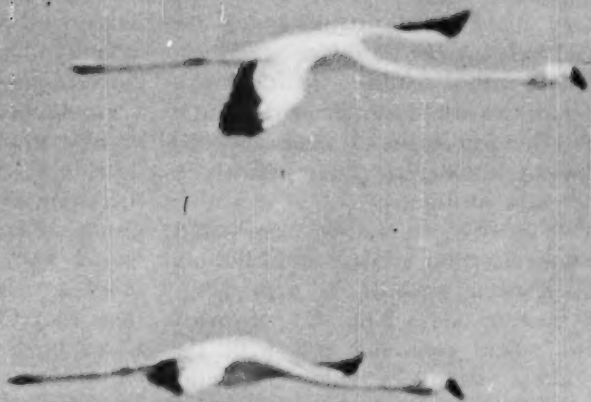
Standing stock still, our hands resting on the broad transom of the skiff,

we listened. The March wind, blowing in from the sea lanes in the direction of Turks Island, to the east, rose and the sound increased in volume and distinctness. It was a din, a clamor, a constant and prolonged uproar, high-pitched and toneless, the sort of sound that can only be made by the dissonant unison of thousands of voices. I did not need to be told that we had located our "filly-mingos." Grinning broadly, Sammy merely pointed towards the swelling outcry and began walking. As it turned out, we still had some four miles to go.

The flamingos of Inagua constitute what may well be the largest remaining concentration of the once abundant American species, *Phoenicopterus ruber ruber*, the unbelievably beautiful and much persecuted bird

* Research Associate, National Audubon Society.

INAGUA



In flight, flamingos look like animated spears hurtling through the air. The wingbeat is fairly rapid, two or three beats per second. While flying they sometimes "honk," like a goose, or "talk" in a high-pitched sort of gabble.

that has been so dangerously depleted in recent years. It was to learn at first hand the status of the Inagua flock, and to get photographs, that we traveled in March, 1951 to Matthewtown, the isolated settlement on the southwest coast of Inagua. Knowing that access to the shallow ponds where the flamingos congregate would be difficult, we shipped our own shallow draft boat by small freighter from Miami. I accompanied the boat, along with camping gear and other necessary equipment, arriving on the island a week ahead of the rest of the party.

On March 22, after I had enlisted the services of Sammy Nixon, a native of the island, the two of us made our way across the salt-encrusted, rock-strewn bottom of Lake Windsor, as the stars dimmed and the moon faded

in the growing light of early morning. At sunrise the east wind came up and, three hours from the time we had pushed into the lake, we heard the clamor of the flock, miles in the distance. Ahead of us were several islands or "cays," lined with thin growths of tropical buttonwood. Each of these was a barrier beyond which we expected to see the flamingos. At the first cay we tied up our skiff and, armed only with water jug and binoculars, we walked to the next stretch of open water. Still no flamingos. We were now getting into the Upper Lakes, a series of extremely shallow ponds and lagoons, interspersed by narrow strips of higher ground, the shores fringed with sparse mats of saltwort, glasswort and other salt enduring plants, and giving way, as if reluc-

tantly, to scattered thickets of buttonwood and black mangrove. Coral rock formations, worn by erosion and other natural agents to a painfully sharp roughness, were strewn about on every hand. Wide stretches of dry marl flats lay before us for seemingly endless miles, merging so indistinctly with the muddy water of the ponds that the whole broad landscape was like one vast desert, glaring faintly in the early sunlight.

We plodded on, wading from ankle-to-knee-deep on a fairly solid bottom and heading towards the next fringe of buttonwoods. The din of many bird voices rose and fell with the wind, a strangely wild crescendo. From heavier growth some distance to the north we also listened to the raucous braying of one of Inagua's wild jackasses, a hymn that is heard on the island day and night.

As we emerged on the east face of Long Cay the sound of the colony was appreciably louder. A few hundred yards farther on Sammy grabbed my arm and pointed off to a break in the vegetation a half mile or so ahead. Through the thin brush we could see a solid band of red. It shimmered and undulated in the warm air exactly like a long sheet of flame. The comparison is inescapable. With the movement of many wings and the raising and lowering of a thousand heads, one could imagine that this was a prairie fire racing across the flat savannah as if completely unrestrained. Our excitement now matched the fever pitch of the mad tumult in the colony. We lengthened our strides and hurried towards the thickest patch of trees that would give us a clear view of the flamingos. There we flopped to the ground and stared without words at one of the most magnificent spectacles in nature.

In the middle of the wide pond an immense body of birds milled about, shoulder to shoulder. There were something like 1,000 to 1,200 individuals in this weaving, churning mass. They had their heads up and faced in every direction, apparently without pattern or obvious purpose. There is a remarkable difference in the tallness of individual flamingos of the same flock, and this disparity in size was strikingly evident in this closely-knit group. Here and there two birds would rear back and stab at each other, grotesque bills opening slightly as they touched for a few seconds. Other birds raised resplendent wings, flashing the black flight feathers and secondaries as they jostled their neighbors for space or position.

The entire group moved, like a great, many-legged red bug, in slow and ungainly fashion across the pond, first in one direction and then in another. Two thousand feet stirred the muddy water almost to a lather. This wholesale disturbance had the abundant little killifishes leaping about in



a frenzy of correlated activity and a busy circle of egrets and herons was constantly at work quite literally darting among the long legs of the flamingos, stabbing and grabbing at their prey and as absorbed in their task as the flamingos were in theirs.

Over the rest of the pond moved several hundreds of additional flamingos. Some fed quietly, others, in uncounted numbers, were engaged in a mysterious ritual. These latter individuals stalked about with elongated strides, almost at a run, and, with rhythmic sweeps of their slender necks, dipped their bills beneath the

water in a scooping motion, as if gathering mud from the bottom. It was impossible to see if they actually gathered anything, but our impression was that this demonstration might be the imperfect and preliminary stage in that part of the cycle related to nest construction. At this date no nests had been built, although it was apparent that the flock was rapidly approaching the start of the active nesting period.

Etienne Gallet, author of the delightful book, "The Flamingos of the Camargue,"* found it difficult to ob-

* Basil Blackwell, Oxford, 1950.

→
Close-up of flamingo
(right) photographed
by Allan D. Cruick-
shank.

↓ Stephen F. Briggs
(left), the guide,
Sammy Nixon (cen-
ter), and the author
(right), boil coffee on
Jackass Cay, their
camp site.



serve the details of pairing "amid the confused fandango" of the nuptial dance. He did not describe this dance, but it seems possible that the strange behavior we observed in the Upper Lakes of Inagua—the milling, preoccupied flock, bickering and moving about in a huddle, excited, disordered mass—may be associated with prenuptial concerns and perhaps with pair formation.

Sammy indicated another large concentration of flamingos in a second pond a mile to the north. We made our way to a clump of mangroves and buttonwoods on the rim of this area and, in endless fascination, watched a similar performance, an immense gathering of birds jammed tightly to-

gether and, all around them scattered individuals stalking about rhythmically sweeping the muddy bottom, or feeding and flying in every possible direction.

As with the first concentration, the closely-packed birds were setting up a fearful hue and cry. It is an almost indescribable hubbub. Broken down, as best one can, it is composed of several ingredients—a low, talking gabble, definitely fowl-like; a high-pitched, goose-like mewling or crying and an out-and-out honking that is very much like the call of a goose. Flying birds, sailing over our heads like elongated, animated spears, either honked or gabbled among themselves. Sometimes, from a distance, the sound of

After feeding, the females and young males sleep, but the taller, older males hold their heads high, always alert. This thin line of feeding and resting flamingos was about two miles long.



the whole vast chorus seemed like the *creaking* of a huge gathering of frogs, and now and then a group of flying birds, passing close overhead, gave a sudden call that had a similar quality.

The next time we made the long and arduous trip down the length of the lake we were joined by the rest of our party, Stephen F. Briggs of Milwaukee and Frank Brown of Naples, Florida. Mrs. Briggs had come as far as Matthewtown, but the route into the Upper Lakes had proved such a hardship that we discouraged her from attempting it. We now tackled the job of transporting some 800 pounds of camera and camping equipment (including a 20-gallon keg of Florida water) over this same route. We made two round trips, camp gear first and then the cameras. It is only about nine miles across the lake from

the western tip to our camp site, but this transportation job required a strenuous day and a half. Probably the last 300 yards were the hardest, for each of us made it, through slick mud and over razor-sharp coral rocks, with as heavy a load on our backs as we could tote.

At length, in the shelter of a clump of buttonwoods on Jackass Cay, at the rim of the Upper Lakes and three miles from the main body of flamingos, we set up Camp Sammy. The problem of toting 300 pounds of cameras, lenses, tripods and film over this three miles on our backs twice a day was solved by making two easy trips and caching the entire outfit close to the birds, hanging it from tree limbs under cellophane covers. Steve Briggs, our official photographer, was able to get at all of his camera gear right on



the spot, and in this way could shoot with any outfit the situation called for, without costly delay.

The flamingos were amazingly tame so long as we remained comparatively still and kept partially under cover. It seemed evident that the Inagua flock had not been seriously disturbed for some time and we felt grateful to the Erickson family, whose extensive salt operations have given employment to most of the island natives, removing almost entirely the necessity for any of them living off the country. I first heard of the Erickson family early in 1948 when discussing flamingos with Fairfield Osborn. He suggested that I get in touch with his cousin, Mrs. Jim Erickson of Inagua, who advised me that a splendid group of flamingos nested there. The three Erickson brothers — Bill, Jim and Doug — are Americans who decided, in 1936, to revive the salt industry of Great Inagua. They regularly employ the majority of the male population of the island which, as Bill Erickson says, "is fine because the natives are now reasonably prosperous and there is no necessity for them to kill flamingos for food."

During the three days that Steve was busy making pictures, we were able to observe the flamingos and their environment under nearly ideal circumstances. Most of those who have written of their experiences with a colony of flamingos have emphasized the extreme shyness of these birds. Either this shyness is confined to the nesting period or the Inagua birds are tamer than other groups.

Squatting alongside a black mangrove with a large 10 x 80 binocular mounted on a tripod, I had to shove the glass aside because the feeding birds came up almost to my feet. With the glass, however, I could watch the unusual feeding method of individual

birds almost as closely as if they had been taking the food out of my hand. The vibrating or pumping of the throat sac, the jets of water and liquid mud that squirt forward from between the open mandibles, the treading of the large webbed feet, all of this was plainly visible. What we could not see was the exact nature of the food or the manner in which it is strained or otherwise separated from the semi-fluid mud.

The density of the salt water in Lake Windsor is extremely high, sometimes nearly thrice the density of normal sea water, and only a limited, highly specialized group of animals is able to live in such an environment. We could find only three forms of small mollusks and one killifish here, but these creatures seem to exist in tremendous numbers. In addition to their ability to withstand high densities, they must also have the ability to live through sudden changes in the degree of salinity, for heavy rains, usually most prolonged in the month of September, may alter the chemical nature of their medium drastically in a very short time.

Other bird species that were more or less numerous in the Upper Lakes, though none approached the abundance of the flamingos, were the American and reddish egrets and the Louisiana heron, all avid killifish feeders. It was of special interest to note that most of the reddish egrets were in the white phase, the ratio being a consistent nine white to each red one. It is apparent that the mutual relationships that exist between the birds, the fish, the mollusks and the saline environment on Inagua provide a situation of great interest.

The biological niche of the flamingo is closely associated with extreme salinity in many locations

throughout its range. This is true on Inagua and in Yucatan. According to L. E. W. Forsyth, who was for so many years familiar with the Andros Island colony, it was also true of the long extirpated group on Rum Cay. Similar saline conditions prevail in the Camargue* of France where M. Gallet studied the Mediterranean species and doubtless a like association will be found in other habitats where flamingos once lived or still survive.

The reasons for this seeming preference for a salt-encrusted world may be simply that it is an environment in

which very few animals can exist, while the flamingo, with its highly specialized feeding equipment and choice of food, manages to find in such a sparse habitat the very essentials of its existence. Here it is almost alone, and that too may contribute to the favorable character of this type of region, for these huge flocks, with their nests built in the mud and shallow water, are peculiarly vulnerable to depredations by man.

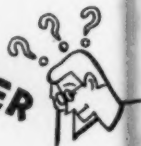
We were awed by the beauty of the flamingos and deeply impressed by their dignity. When the greater part of one of the immense concentrations was feeding, they were guarded by an alert platoon of very tall flamingos,

Continued on Page 264

* For an account of this interesting area see, "The Camargue — 'Everglades' of Southern France," by Georges Olivier, *Audubon Magazine*, January-February, 1950, pp. 14-20.



HOW MANY CAN YOU ANSWER



By TAMARA ANDREEVA

For most of the modern inventions there already exists a counterpart in nature. Jet propulsion, anaesthesia, electricity, are all found among various creatures. Here is a list of animals and a list of inventions they utilize. Try matching the right animal with the invention it uses. Answers are on page 259.

- | | | | |
|--------------------|------------------------------------|--------------|-------------------------------|
| 1. Bat | () Snowshoes | 9. Birds | () Jet propulsion |
| 2. Armadillo | () Swaddling clothes | 10. Scorpion | () Parachute |
| 3. Chameleon | () Radar | 11. Snake | () Helicopter |
| 4. Deep sea fishes | () Gun blasts and chemical attack | 12. Antelope | () Plane flaps (for braking) |
| 5. Echidna | () Tank | 13. Abalone | () Hypodermic |
| 6. Squid | () Camouflage | 14. Beetle | () Anaesthesia |
| 7. Flying squirrel | () Electricity | 15. Caribou | () Signal code |
| 8. Hummingbird | () Spurs | 16. Silkworm | () Suction cup |

SANCTUARY ON THE PERKIOMEN

*Audubon's Farm near Norristown, Pennsylvania
Becomes a National Shrine*

All photographs, unless otherwise noted, by Raymond J. Middleton, Jr.



By George Dock, Jr.

THE high-water mark of this Audubon Centennial year may prove to be the recent purchase of Mill Grove from private owners, to become a 122-acre public Audubon memorial and sanctuary, under the Commissioners of Montgomery County, Pennsylvania. This is welcome news to anyone interested in perpetuating the heroic tradition of Audubon's life and work, and to millions of other Americans who seek to advance the larger cause of wildlife conservation.

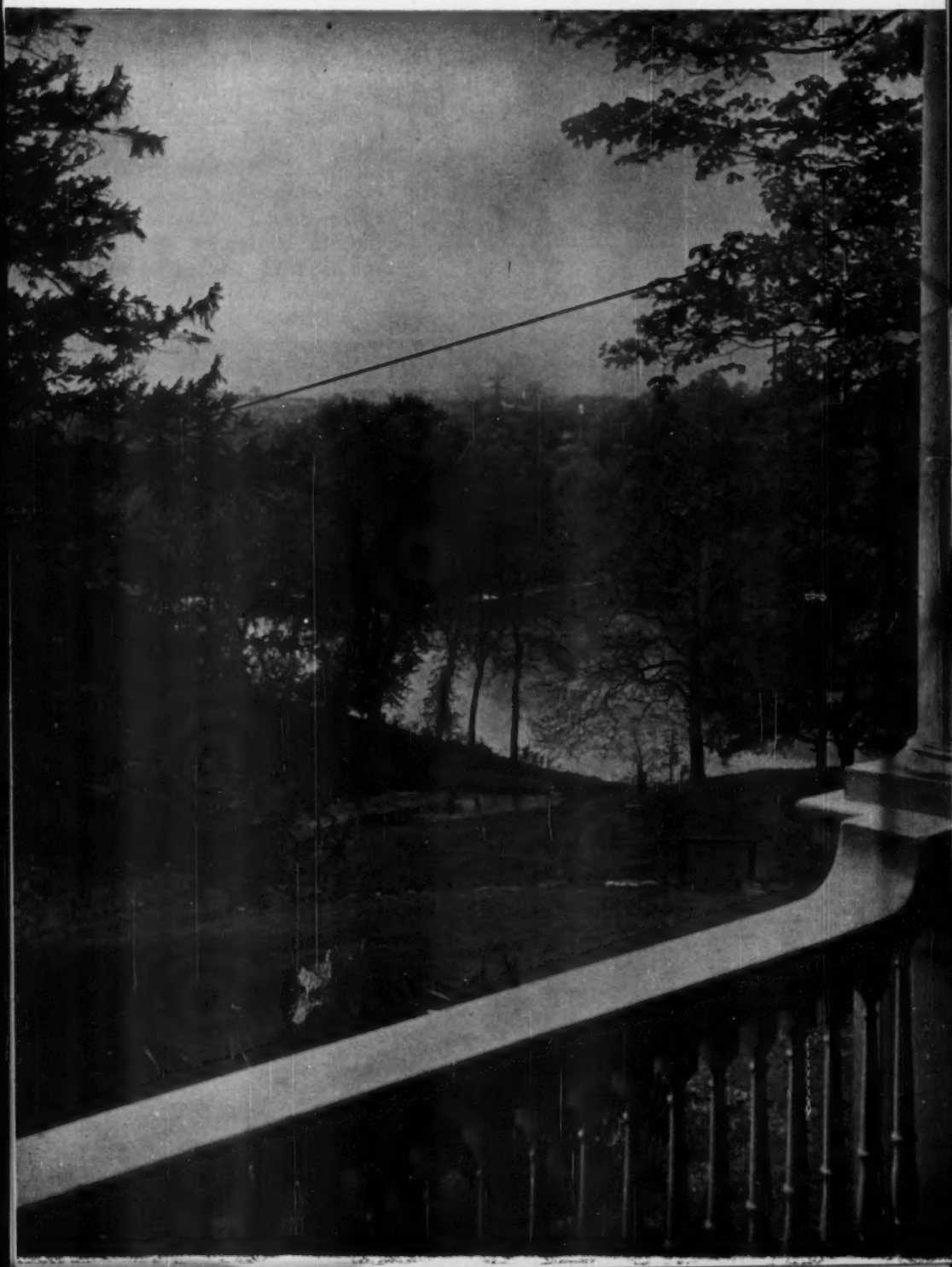
That lovely estate beside the Perkiomen Creek is historic for its lasting stimulus to Audubon's own life and achievement. It was there in 1804 that he first came to know and paint the birds and other animals of his adopted land and there that he conceived the idea of a series of life-histories of all the American birds, which materialized 30 years afterward in his 3,000-page "Ornithological Biography." It was there that he worked out his astonishing method of painting birds after first wiring his models into natural positions—and at Mill Grove he devised the first American bird-banding experiment by attaching fine silver wires to the legs of nestling phoebes.

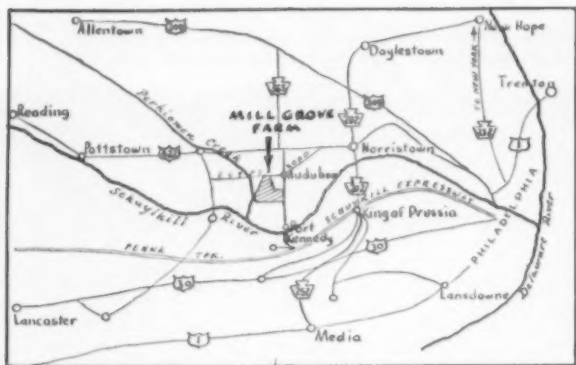
Mill Grove is important for many reasons beyond its having briefly sheltered Audubon in his decisive first American years. The chain of history of that beautiful estate and its owners strangely joins it with one of the earliest steps in natural resource preservation on this continent, with some of the most savage ordeals of the Revolutionary War, with the French Revo-

Rear view (upper photograph) of Audubon's first home in America.

Looking west from front porch of "Mill Grove" along Perkiomen Creek near village of Audubon in eastern Pennsylvania. Audubon, formerly Shannonville, Pennsylvania, was renamed in 1899 in honor of John James Audubon. →

Montgomery County (Pennsylvania) Commissioners plan to make Mill Grove Farm a bird sanctuary and a museum for Audubon's paintings and personal effects.





Map of Philadelphia area, showing location of Mill Grove Farm and highways by which it may be reached.

lution, then with Audubon's career and, later, with the genesis of our own national, state and local Audubon societies. The sequence is extraordinary.

In 1681, William Penn issued his far-sighted ordinance requiring the colonists under his royal charter to leave one acre of original woodland untouched out of each five acres they cut down or burned for farms or settlements. "Penn's Forest" was appropriately named! Less than a century later, one of Penn's descendants, John Penn, bought a property of nearly 300 acres near Norristown, known even then as Mill Grove. In 1776, Penn was deprived of his position as the last British governor of Pennsylvania. He sold Mill Grove, eight years later, to a French planter named Prevost.

The world was in turmoil in those closing years of the eighteenth cen-

tury. In 1789, a retired French sea captain, Jean Audubon, fled to the United States from his plantations in San Domingo as fearful slave insurrections swept the Antilles. His native France was threatened, too, by a human hurricane that had just leveled the Bas-

tille, and would soon overtake the fugitive royal coach at Varennes, and then destroy the ancient bulwarks of French feudal civilization. The elder Audubon probably sought refuge in the New World for the same prudent reasons that recently have led thousands of American city-dwellers to buy remote rural acres, because of the threat of atomic warfare! He purchased the Mill Grove property. Jean Audubon quickly left the United States, however, and spent the remainder of his long life in France.

With the calmer days of 1803, but with the outlook black from the threat of military strife on the Continent, Jean Audubon helped his son, John James, to escape the Napoleonic draft by emigrating to America, where he was to develop the lead mine on his father's Mill Grove property. A quarter of a century earlier that mine had furnished bullets to American troops at nearby Valley Forge. The estate itself was looted, and its fences were



Left to right, Commissioner Fred C. Peters, Carl W. Buchheister, vice-president, National Audubon Society, Raymond Middleton, president, Audubon Club of Norristown, H. Severn Regar, Norris D. Wright and Commissioners Raymond K. Mensch and Foster C. Hillegass. Photograph by Staff Photographer, Norristown Times Herald.

burned more than once by British and Colonial soldiers in those atrocious winter months of 1777-78.

Young Audubon—he was only 19—arrived at Mill Grove early in 1804, and quickly lost interest in the lead mine under the lure of the Pennsylvania wilderness. He devoted his time to roaming the wooded hills along the Perkiomen and the Schuylkill, to hunting, taxidermy and painting and, presently, to courtship. The girl was Lucy Bakewell, a daughter of the cultured Englishman who had lately bought the neighboring Fatland Ford plantation.

As the wife of John James Audubon, she became the inspiration of his life. Through the 18 dark years of his

poverty and failure in business and his thankless first struggles as a nature-artist, she alone stood by him always. Through her own earnings as a school-teacher she freed him to carry out his great plan of painting all the birds of America. Without her loyalty and her encouragement, he might never have seen that task to completion.

Following Audubon's death in 1851, Lucy Audubon resumed her teaching at her home in New York City. Among her pupils was a lad, George Bird Grinnell, who was to make nature-writing his own lifework. In 1886, as a move toward the protection of our disappearing wilderness and its wild creatures, Grinnell led a small group in organizing the first of all Audubon

John James Audubon was only 19 when he arrived, in 1804, at Mill Grove Farm.



societies. Perhaps our thanks for that are due to the disturbing influences of a world in conflict that had prompted Jean Audubon to buy Mill Grove nearly a century earlier.

Yet John James Audubon actually spent less than two years of his life on those paternal acres. He returned to France early in 1805, to remain a year. In the autumn of 1806 he moved to New York City to undergo the torment of learning mercantile matters in the office of Benjamin Bakewell, his fiancée's uncle. In 1808, he went back to Mill Grove to be married, but he soon set out with his bride for the western settlements in Kentucky, never to return to the Perkiomen to live.

The property was sold in 1813 to Samuel Wetherill, of Philadelphia, whose descendants have owned it, and preserved it well, down to the spring of 1951, when it was sold by Herbert J. Wetherill to the Montgomery County Commissioners, to be held forever as an Audubon shrine.

The steps by which Mill Grove has now become a part of the "public domain" may give heart and thought to far-seeing people in many other communities throughout North America, who seek to save our priceless woodlands, dunes and marshes from devastation by real estate ranch-type subdivisions, "reclamation" projects, public beaches and expressways.

Not far from these lovely wooded banks of the Perkiomen, Audubon made his famous first bird-banding experiment with young phoebes.



The preservation of Mill Grove is largely the outcome of the dreams and labors of one man, Norris D. Wright, a leading Norristown banker, a life-long student of Audubon's life and work, and for many years an active fighter for the protection of Pennsylvania's historic sites. He is president of the Valley Forge Park Commission, which has made that "eternal camping-ground" of Washington and his army one of the finest parks in America. Cooperating closely with Mr. Wright in the effort to purchase Mill Grove have been the Montgomery County Commissioners.

Mr. Wright's task in creating public interest in the permanent protection of Mill Grove was perhaps lightened by the general local concern for wildlife conservation, which had been built up during the past two decades by the Audubon Club of Norristown, of which Herbert Wetherill's father was a life member. Through the individual vision, group effort and cooperation that Mill Grove illustrates, will be found the most effective pathway for progress in conservation, whether county, state or national.

Many members of the National Audubon Society will visit Mill Grove after it is opened to the public in the spring of 1952. They will find it a place of inspiration and charm. The ivy-covered, brown fieldstone house remains today almost unchanged from its appearance when the "American Woodsman" covered its walls with his paintings and crowded its mantels with mounted specimens of birds and other animals he had collected in the nearby Pennsylvania wilderness. Just

as in that older time, well-kept orchards, rolling meadows and woodland now surround the house and the great stone barn. To the west and south, the hill slopes down into the Perkiomen Valley and opens the distant panorama that Audubon knew so well.

Coming for the first time to Mill Grove on a bright early autumn day last year, strolling about the grounds, and visiting the nearby hidden "burying-ground" in the woods, where many of the Bakewells rest, I remembered the lines of Kipling:

*"I pledge my word you'll find the
pleasant land behind*

*Unaltered since Red Jacket rode
that way.*

*Still the pine-woods scent the noon;
still the catbird sings his tune;*

*Still autumn sets the maple-forest
blazing;*

*Still the grape-vine through the dusk
flings her soul-compelling musk;*

*Still the fire-flies in the corn make
night amazing!*

* * *

*The things that truly last when men
and times have passed,*

*They are all in Pennsylvania this
morning!"**

Thanks to the men and women who are making such sanctuaries as Mill Grove possible, all those "things" should last even longer than Kipling could have dreamed, and not alone in Pennsylvania.

* From "Philadelphia" in Rudyard Kipling's Verse, p. 587, Definitive Edition, Doubleday & Co., Garden City, L. I., 1946.

• • •

Audubon's former home and the beautiful Mill Grove estate will be open to the public in the Spring of 1952.



"Little Orphan Ani," the pet smooth-billed ani raised by the author. The bird, when photographed, was about 3½ months old.

All photographs, unless otherwise noted,
by Leslie M. Weetman.

LITTLE ORPHAN ANI

By Jack H. Merritt

ALEXANDER SPRUNT, Jr.'s letter in *Audubon Magazine* for November-December, 1950, deplored the destruction and lack of protection for the colony of smooth-billed anis which makes its permanent home in Clewiston, Florida.

As a direct result of Mr. Sprunt's article, hundreds of letters from *Audubon Magazine* readers, expressing deep concern for the preservation of the only nesting colony of these birds in the United States, have poured into the city officials and to the editor of *The Clewiston News*.

Upon receipt of these letters, the city commission and townspeople were quick to recognize the civic asset of having these birds and immediately took steps to preserve them. Mayor R. J. McLeod promoted interest among the Boy Scouts through bird conservation talks and well-directed field trips. This resulted in the ready identification of the anis and the many other species of birds in this region. *The Clewiston News*, the Clewiston Garden Club and the U. S. Sugar Corporation, all ably assisted by the local police, have joined in making Clewiston, Florida one of the most bird-conscious communities in the

These wild smooth-billed anis, photographed near Clewiston, Florida, are not shy. They are sometimes shot by boys who kill grackles and other small birds that are easily stalked.



United States. Thousands of nature enthusiasts from all parts of our country have flocked to Clewiston to see the smooth-billed anis which have established homestead rights in this beautiful town.

This colony of birds is now increasing despite the ill-effects of an occasional hurricane which takes its toll of birdlife. Paradoxically, the smooth-billed anis, *Crotophaga ani*, members of the cuckoo family, were first observed in the Clewiston area after the great hurricane of 1926. As these birds are weak, low-altitude flyers, it is plausible that they were originally blown by tropical hurricanes from the West

Indies,* their native home, to the Florida mainland. Clewiston, on the south shore of Lake Okeechobee, has many ecological factors similar to the ani's natural habitat outside of the United States, so that it is not surprising that they are established here.

Locally, the ani is known as "Cuban parrot," "voodoo bird," "black witch," "black parakeet" and "tick bird"—the latter name resulting from its habit of removing ticks from cattle.

My attention was focused on these birds upon my arrival in Clewiston in the spring of 1948. I first saw them,

* The smooth-billed ani is a native of the West Indies, Yucatan, Central and South America. It is considered of casual occurrence in Louisiana and Florida.

Birds of the wild ani colony of Clewiston come to the flowering and fruiting heads of the white-flowered shepherd's needle, *Bidens pilosa*, for the insects they harbor. This plant is a weed of roadsides and uncultivated fields.



individually, and later, in small groups, creeping, hopping and climbing about in their curious parrot-like manner, their large, curved beaks suggesting a possible relationship with the parrots. Superficially, and at a distance, the anis are sometimes mistaken for the boat-tailed grackle, as both species are black, and approximately 14 inches long. The flight patterns of the two species are somewhat alike, but here all similarity ends, as the personality, movements in the trees, beaks, calls and feeding habits of the two are very different from each other.

The ani has no specified nesting season, but lays eggs and incubates at any time.* I have seen them nesting in February and in December. In their unique mating and nesting, three or four females and one male usually form the family group. The eggs, averaging seven, are deposited in a shallow, poorly-constructed nest, often from 10 to 30 feet above the ground, usually in a *Melaleuca leucadendron*, in various palms, or in other tropical trees. As a rule, a nesting site is chosen which is near a residence, as these birds are afraid of natural enemies, but remarkably trustful toward humanity. They are born "socialists," and believe in share and share alike in everything.

Over the moist, open meadows of Para grass, edged with *Bidens*, bordering the sugar cane fields in and near Clewiston, the anis range in their systematic, never-ending search for the multitudes of grasshoppers, crickets, moths, green tree frogs and chameleons which form a large portion of their diet. They travel about in loosely-knit

flocks of from five to a dozen or more individuals and utter a variety of clear, liquid calls, their principal call being somewhat similar to a bob-white's, with some notes suggesting the mewling of kittens, and still others which are harsh and querulous.

While these birds are feeding in the *Bidens* or in the waist-high grass, they maintain a sentinel, or lookout. The sentinel perches well up in a tall bush or a handy tree, where it constantly surveys the sky, surrounding country, and the feeding flock. Upon the approach of an intruder, an alarm is given, and the colony arises from the grass and departs.

On windy days when they clamber about, they present a ludicrous appearance as their long, loose-jointed tails blow crazily in the breeze. The sexes appear identical, except that the male is slightly larger than the female, has a much heavier beak and is more aggressive.

In spite of the fact that these birds have been intermittently in the Clewiston area during the past 25 years, any increase in their numbers has been greatly offset by losses from predation, severe drops in temperature, high winds and other factors. In October, 1950, I made a careful survey during several weeks, and found only six anis in the Clewiston area. In a survey in April, 1951, I found approximately 30 in Clewiston.

On October 18, 1950, a tropical hurricane roared across Clewiston and the "Okeechobee Sea," reaching a maximum velocity of nearly 100 miles per hour. Our little house shook and trembled under the terrific buffeting, and we expected momentarily that the roof would be ripped away. Suddenly the hurricane ended, a dead calm prevailed, but one could sense sinister currents of tremendous power as the

* The author's account refers to the nesting habits of the smooth-billed ani as he has observed them in Florida. For details of its nesting, eggs, food and behavior in its native tropical home, see "Life Histories of North American Cuckoos, Goatsuckers, Hummingbirds and Their Allies" by A. C. Bent, Bulletin 176, U. S. National Museum, Washington, D. C.—The Editors.

hurricane's "eye" passed over with a curious sighing.

As soon as daylight arrived, my wife and I left in our jeep to survey the damage. Debris and uprooted trees were everywhere, although property damage was light. As we drove along, detouring at intervals, we centered our attention on birds.

We searched, but not a single ani could be found. We saw very few birds of any species, and the individuals we saw appeared dazed and distraught. A red-shouldered hawk flew jerkily from tree to tree, calling frantically for its mate. A crippled spotted sandpiper moved about uncertainly in a shallow pond in a yard. Several boat-tailed grackles flew about confusedly.

Late that afternoon the debris caused by the hurricane was removed from the residential area. Two very excited youngsters came to our home and told us that a baby "black parakeet" had been found by a teacher in a yard where the nesting tree had been uprooted. The nest had been destroyed, and several tiny baby anis lay dead on the ground. A number of ani eggs were scattered over the lawn. We went to the home of the kind-hearted teacher who was delighted to give us a small, half-naked, vulture-like creature, about two inches long, which we christened Little Orphan Ani. Evidently, the parents had been forced by the high wind to desert their nest.

The odd little bird was very friendly toward human beings from the start. She clucked like a bantam hen, and darted about on wobbly legs in a lively manner. She sought our companionship, crawling and pulling her way with wing "elbows" and beak, up our legs and onto our laps, arms and shoulders, where she sat contentedly and tweaked our ears.

Little Orphan Ani's new home consisted of several branches of Australian pine and avocado, placed on the chaise longue, our entire screened front porch serving as her cage. Here she enjoyed comparative freedom, safety, and a wonderful view of the outside world.

Daily, she had many feathered visitors—curious house sparrows, yellowthroats, palm warblers, house wrens, hummingbirds, boat-tailed grackles and mockingbirds—all eyeing Ani questioningly as they flitted about in a hibiscus shrub near her perch on the front porch.

Here Ani welcomed the school children in the afternoons. Their reward for a big, fat, juicy grasshopper would be their glee in watching Ani's rapidly vibrating wings, hearing her shrieks of desire, and seeing her snatch and gobble the 'hopper as if she were on the verge of starving! When the neighboring women paid a call, she kept up a constant chatter while they talked, like an undertone of static in an old-style radio.

When Little Orphan Ani was about 12 days old, she gave her first characteristic call notes, and continued to elaborate and extend the variety of calls during the next two weeks. During this time, she pulled, stretched, yawned and preened her feathers. She paid special attention to her eight tail feathers which were now about seven inches long—spreading them like an elaborate fan and distributing the oil from the root to the tip with her beak. During this period, she was as fidgety as a child cutting teeth, and dull and phlegmatic early in the mornings—a slow starter until the sun warmed her. She loved to bask in the sunlight as its radiation promoted growth. Upon exposure to the rays, she would spread her wings and tail feathers, perching

for long periods with her back turned to the sun.

By November 1, she was bathing regularly in a shallow pan. Splashing energetically, she would almost submerge, and then would sit quietly while I poured water on her head and back. After about 10 minutes of this, she would perch near the solarium, spread her wings and tail feathers, and preen and oil herself, drying completely in a very short time. By November 15, she was picking up straw and twigs, running around with them and elaborately placing them on the ground, evidently training for nesting days to come!

When she was about five weeks old,

we carried her to her native haunts and released her, hoping that the colony of seven adult anis would take over our job. They came very close — within 10 feet of us — examined Ani carefully and talked to her, but she gave no sign of recognition. We left her in a mulberry thicket, expecting her to join the anis after our departure. As we moved out to the path, I looked behind, and there she came through the heavy Para grass, following us like a little lost kitten. Again we placed her in the mulberry bush and left rapidly, returning home.

Within two hours a severe rain squall came up, and after it was over we got in our jeep and returned to the

"Little Orphan Ani," perched on the arm of Clewiston's Mayor, R. J. McLeod, reaches for the grasshopper offered her by her owner, Jack H. Merritt. *Miami Herald* staff photograph.



area where we had released her. We could hear her calls of distress, filled with wretchedness and despair, floating out in the cold, still air. After tramping through the high, wet grass in all directions without success in finding her, we gave up, deciding that we had finally lost her as it was becoming dark. With heavy hearts, we turned to leave.

As we reached the jeep she flew or glided from a clump of tall grass near the edge of a canal to the center of the path, where she stopped — too weak and spent to go farther. When we walked up — there she sat, a pitifully small black creature, looking up at us reprovingly with her bright, beady eyes. Little Orphan Ani hopped up on my wife's shoulder where she remained until we got home. By next morning she had completely recovered from her adventure.

Ani is very sensitive to temperature changes. A 20 degree drop occurred last winter and she became frantic, giving urgent distress cries.

She loves bright objects and will perch on the hands of her friends, picking at their rings or other pieces of jewelry. One woman with a beautiful solitaire was highly amused when Ani seized the stone in her beak, and giving it several lusty yanks, tried to remove it from the set.

During our breakfast hour, the open back porch, where we have placed a perch in the early morning sunshine, is her domain. Upon several occasions, one, and then two mockingbirds came to the porch and immediately Ani began to utter a deep guttural croak, sounding like "Koh, Koh, koh, koh!" — her neck distended and swollen, giving her an appearance for all the world like a small black cobra. After a few minutes of this, she flew at the mockingbirds, driving them off

the porch. She is a jealous little soul and is quite determined to defend her territory against all winged intruders.

Ani shows no indication of wanting to leave us. She does not help too much with grasshopper hunting, being content to let us do it for her while she follows, always ready to eat our catch.

★ N A T U R E

Along the American Way

By Wheeler McMillen

Reprinted from Pathfinder, April 4, 1951

Private effort for public good

A solitary grave at the southernmost tip of the U. S. mainland, reflects a glorious aspect of the American way. Guy M. Bradley is buried on East Cape Sable amidst a lonely wilderness of marshes, sawgrass and mangroves. He was killed by plume hunters.

The egret, the heron and the ibis own most of southern Florida by right of eminent domain. Now that the Everglades National Park has been created, their possession appears to be secure.

The shining white egrets wear strikingly beautiful plumes during their breeding season. Fifty years ago women regarded these plumes as desirable adornments for hats; plume hunters slaughtered egrets by tens of thousands.

Then as now there were people who believed that living egrets would provide more pleasure than dead plumes. Thus came development of the National Audubon Society, perhaps the first organized effort to conserve natural resources. Laws to protect such birds as egrets were obtained. Guy Bradley was an Audubon warden who lost his life while trying to save the egrets from hunters.

Egrets have again become abundant. They nest peacefully in their rookeries and continue to multiply. In late July and August many appear for a few weeks along the upper Mississippi and in the eastern states.

Little Orphan Ani is rapidly assuming the general appearance of an adult. Mature feathers are replacing the juvenile pinfeathers, her beak has become thick and curved like a parrot's and the upper mandible has acquired a large horny ridge. Like Svengali, the weird hypnotist of Du Maurier's "Trilby," Ani's visage seems darkly sinister,

but it is the warm, sunny personality of Little Orphan Ani, which attracts everyone — old and young. We are hoping that Ani will soon show an interest in other members of her race. Like all fond parents, we are looking forward to the day when she will find a suitable mate, and build a home of her own.

I N T H E N E W S ★ ★

Using private funds, the Audubon Society has in recent years rescued from probable extinction an even more striking and beautiful bird, the roseate spoonbill. Where once only a hundred or so remained, now several hundred pairs are nesting. Valiant effort is being made to preserve the whooping crane; less than 40 survive.

In Florida and South Carolina, Audubon wildlife tours have been established. Using boats and station wagons, skilled naturalists lead visitors to the bird haunts. In Maine, California, Connecticut and Texas Audubon summer camps train teachers and leaders who in turn will introduce others to an appreciation of the wealth of interesting wildlife we still possess.

Private effort has influenced public sentiment enormously. Gunners no longer shoot

indiscriminately at every creature which flies or moves. Winter feeding trays in dooryards attest to the pleasure people find in outdoor life that once went unobserved.

Many other organizations, with millions of members, have been working to preserve the forests, the waters, the soil and other resources with which nature enriched the American land.

This would not be America without the constant upward lift of privately organized and privately financed endeavor to make life better for others. The churches from the beginnings of the nation have been supported by their members. Higher education is largely financed by private philanthropy. Great national campaigns annually raise funds for research and services in the field of health.

Every community worth living in has its own organizations dedicated to making the place even more worth living in. Every business, trade and profession has organizations to advance its well-being and raise its standards.

There are those who say we Americans are over-organized. That may be. But without the power of the multitude of private organizations, the country would be far less attractive.

Perhaps a still vaster Government bureaucracy could get some of the jobs done in a way, but certainly not so well. And certainly it is better to have the choice between giving or not giving than to be taxed.

Bradley's lonely grave on East Cape Sable symbolizes an American ideal. We organize to get worth-while things done for ourselves and for others, and do not leave it all to Government. That's an American way.



Guy Bradley, Audubon warden murdered by plum hunters in 1905.

Anna's hummingbird at syrup-bottle feeder.



All photographs
by the author.

Hummingbird Ways

By Robert S. Woods

IN a passage quoted in *Audubon Magazine* (May-June 1950) from "The Naturalist on the River Amazon," Henry W. Bates says:

"Hummingbirds are unlike other birds in their mental qualities. The want of expression in their eyes, the small degree of versatility in their actions, the quickness and precision of their movements, are all so many points of resemblance between them and insects."

In "The Naturalist in La Plata," W. H. Hudson expresses similar views: "It has frequently been remarked that humming-birds are more like insects than birds in disposition. . . . Their aimless attacks on other species approaching or passing near them, even on large birds like hawks and pigeons, is a habit they have in common with many solitary wood-boring bees. They also, like dragon-flies and other insects, attack each other when they come together while feeding. . . ."

"Again, like insects, they are undisturbed at the presence of man while

feeding, or even when engaged in building and incubation; and like various solitary bees, wasps, etc., they frequently come close to a person walking or standing, to hover suspended in the air within a few inches of his face; and if then struck at they often, insect-like, return to circle round his head. All other birds, even those which display the least versatility, and in districts where man is seldom seen, show as much caution as curiosity in his presence; they recognize in the upright unfamiliar form a living being and a possible enemy."

Many other writers have referred to the extreme pugnacity or quarrelsomeness of hummingbirds. However, before accepting unquestioningly the conclusions of eminent naturalists, we may well exercise our right to examine the evidence upon which they based their verdicts.

In recognizing the resemblance between hummingbirds and certain insects such as hawk-moths, due consideration should be given to the fact that parallel adaptation to the same method of obtaining food would naturally



The black-chinned hummingbird, nearest relative of the ruby-throat, is the least brightly colored of our hummingbirds, but some of its notes are pleasing and the female is especially skilled in nest-building.



From his observation post, this Costa's hummingbird keeps a sharp watch for trespassers within his territory.

bring about analogies in both structure and actions. The lack of fear which is cited as evidence of insect-like mentality is certainly well justified by the bird's quickness and alertness, which enable it to maintain its abundance even though only two, four, or occasionally six eggs are laid each year, and the young are subjected to the vicissitudes of an unusually long period of helplessness, and dependence upon the female parent only. This contrasts strongly with the immense potential annual increase by which most insects must compensate for their high death rate.

That the hummingbird is not in fact foolhardy or lacking in judgment is indicated by my own observations that a cat seems much more disturbing to it than the near presence of a human being. While their alarm is usually caused by motion rather than form, some hummingbirds show quite as much suspicion of an unfamiliar stationary object, such as a camera, as do many other birds. That hummingbirds are curious and actively interested in their surroundings is undeniable, but it seems strange that this

should have been regarded by Mr. Hudson as an evidence of low mentality characteristic of insects.

Resident hummingbirds select certain territories, which are defended with vigor, as is true of many other non-gregarious birds. The principal difference lies in the persistence of the hummingbird trespassers which appear to enjoy the chase, and after being pursued for a considerable distance, often return close on the heels of the pursuer to hover before him as an invitation to another race. The only serious hummingbird battles apparently occur when a new or abandoned territory is in dispute between two well-matched individuals seeking to take possession. Even then, the murderous-looking thrusts are aimed a little to one side of the adversary instead of directly at him. Hummingbird activity is most feverish during migrations when the birds are abundant and in almost constant movement. Then pursuits are continual, but no casualties result and it seems to be all in the spirit of good fun.

The alleged pugnaciousness of the hummingbird can best be judged by

observing its attitude towards other birds. While they are often seen in hot pursuit of other species, I have never known a hummingbird to attack any other bird which refused to enter into the game, and birds as small as goldfinches show no concern when challenged by hummingbirds. I am convinced that animosity or combativeness no more enters into these pursuits than it does when a small dog chases a passing vehicle. Furthermore, hummingbirds may be found nesting near other birds, apparently in complete amity; they not only show no aggressiveness, but endure the bullying of larger birds without resentment. I have more than once seen an Anna's hummingbird—forced away from its syrup bottle by a house finch or an Audubon's warbler—patiently wait on a near-by perch until the interloper had left.

Play is undoubtedly a dominant motive in the life of the hummingbird, especially among the immature birds. I have seen a solitary individual, hovering in the air, rapidly spin around

through one or two complete revolutions, for no conceivable reason but its own amusement. Perhaps this playfulness is the indirect result of the efficiency of the bird's mode of feeding, which leaves it with an abundance of leisure time and surplus energy at its disposal. The energy expended in play or in defense of territories must be vastly greater than that which is necessary to the bird's maintenance. That these flights are by no means effortless may be realized on a hot day, when a hummingbird will return to a shaded perch and sit for some moments with its bill open, its whole body shaking with the violence of its panting. Despite the great amount of unnecessary flying, the difference between work and play seems to be clearly recognized, so while engaged in the prosaic business of probing the flowers, the hummingbird never misses an opportunity to take advantage of any available perch, sometimes hanging almost upside down to reach a flower without using its wings. For this reason, when I provide our hummingbirds with

The sheen of the metallic green back feathers on the Allen's hummingbird distinguishes it from the rufous. The bird is feeding at a blossom of tree tobacco, *Nicotiana glauca*.



feeding bottles, the addition of a convenient perch is greatly appreciated by them.

Hummingbirds learn through experience, thus demonstrating their mental kinship with the higher animals rather than with insects. Bright colors are in themselves attractive only to the younger individuals, which learn by trial just where their food is to be found. Once this is learned, the birds may be seen seeking out some of the smaller and more inconspicuous flowers while larger and showier ones are ignored. When installing a new feeding station, it is much easier to attract the immature birds, whose curiosity and experimentation leads them to investigate anything unusual.

Through these feeding devices a more intimate understanding of hummingbird psychology may be obtained. Some of the birds are timid and never overcome an attitude of nervousness when visiting the feeders, while others approach them with complete assurance. The hummingbird's accurate memory for location may be demonstrated by removing a feeder which it has become accustomed to visit, after which it will return several times and hover in the air at the exact spot formerly occupied by the feeding device. On the other hand, a similar bottle in a new location will be immediately recognized and visited by them.

Perhaps because of their habitual association, hummingbirds show little fear of bees, sometimes thrusting their bills through a struggling mass of the insects at the mouth of a syrup bottle. Although bees are usually ignored, I have seen a hummingbird dart with its bill open at flying honey-bees as if threatening to bite them. Ants are treated by hummingbirds with much more respect, and a few of these walk-



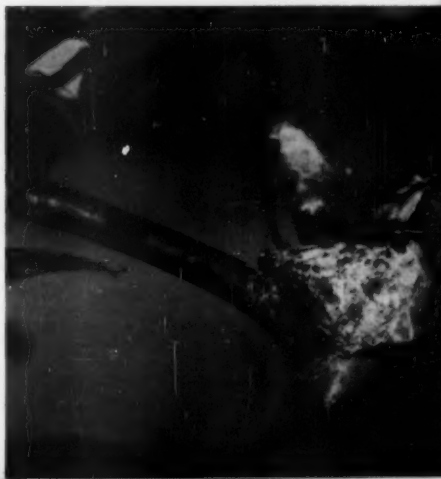
Costa's hummingbird on its nest built in an open situation.

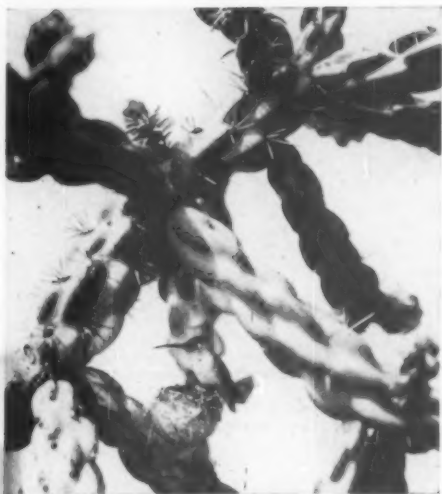
ing about the mouth of a bottle are sufficient to keep the birds away.

Experiments with perfumes, together with the seeming lack of preference for heavily scented flowers, indicate that the sense of smell is not important in the hummingbird's detection of food.

The hummingbird's hearing is well developed, and the click of a camera shutter will often cause them to fly instantly, as does a sudden visible movement. The slight sound of the rustling dead leaves will cause hummingbirds to become alert, just as it

A Costa's hummingbird arranging nesting material, which it may add to the nest even after its eggs are laid.





Nest of Costa's hummingbird in "cholla" cactus. This species prefers drier regions than the other six species of hummingbirds in California.

does with many other creatures. It is probable that hummingbirds are able to distinguish all the colors of the spectrum; bits of red or blue cloth seem to attract their attention equally, while green is ignored.

Many naturalists believe that red flowers have a greater attraction for the birds than those of any other color; perhaps this is because red, as the complementary color, stands out most conspicuously where the pre-

Female Costa's hummingbird feeding young ones that are almost ready to leave the nest.



vailing background is green. In the Southwest, where backgrounds are as likely to be brown as green, I can detect no preference by hummingbirds for any one color.

Notable among the hummingbird's varied activities are the courtship flights of the males, in which each species practices its own particular form or forms of flight, accompanied by sounds—some vocal, some caused by specialized flight feathers—so peculiar and characteristic in quality that any of the seven California species can usually be identified at a distance by sound alone.

In two of its qualities which cannot be discussed in detail here, it does not seem that the hummingbird's equal exists anywhere in nature: first, in the luminous brilliance reflected from certain portions of the plumage; second, in its complete mastery of its movements in the air. Its instant coordination can perhaps best be realized by noting the ease with which it probes the throats of small blossoms being blown to and fro by changeable gusts of wind.

In reply to the statements of Hudson and Bates I quote from the English artist-naturalist, John Gould: "That our enthusiasm and excitement with regard to most things become lessened, if not deadened, by time, particularly when we have acquired what we vainly consider a complete knowledge of the subject, is, I fear, too often the case with most of us; not so, however, I believe, with those who take up the study of the family of Humming Birds. Certainly I can affirm that such is not the case with myself; for the pleasure which I experience on seeing a Humming Bird is as great at the present moment as when I first saw one."

MYTH - INFORMATION

By Lewis Wayne Walker

(Many wildlife myths and legends, built up by our early settlers around certain kinds of American birds and other animals, persist from generation to generation. In the third of a series, a writer-naturalist tells the true story underlying some pet beliefs.—The Editors)

Number 3 in a series

Slit-Tongue Crows Make "Talkers"

Of the thousands of young crows taken from the nest each year to be raised as pets, many die from the cruel and misguided belief that slitting their tongues will enable them to imitate human speech. The belief that crows can be made to talk by this operation is widespread but has absolutely no basis of truth. If, after such surgery, the tongue heals and regains its original form there is a possibility that the bird will mimic the human voice with such simple words as "hello" and "what." Crows taken from the nest and never made to undergo surgery will utter the same words and in the same way. They make amusing, mischievous pets but cannot compete with parrots in talking ability.



Young crows photographed by Allan D. Cruickshank.

Audubon Centennial Stamps



BELTED KINGFISHER

NATIONAL AUDUBON SOCIETY

"The . . . usual range of the Belted Kingfisher . . . is . . . the rivers and creeks that abound throughout the United States . . . it is not unusual to hear the hard, rapid, rattling notes of our Kingfisher, even amongst the murmuring cascades of our higher mountains . . . Incubation is performed by both parents, which evince great solicitude for their young. The mother sometimes drops on the water, as if severely wounded, and flutters and flounders as if unable to rise from the stream, in order to induce the intruder to wade or swim after her . . ."

John James Audubon, pp. 206-207, Vol. IV, "The Birds of America," George R. Lockwood & Sons, New York.

"The flight of this species is remarkable for its speed and the ease and elegance with which it is performed. The Wood Duck passes through the woods and even amongst the branches of trees with as much facility as the Passenger Pigeon . . . I never knew one of these birds to . . . nest on the ground, or on the branches of a tree. They appear at all times to prefer the hollow broken portion of some large branch, the hole of our large Woodpecker (Pileated), or the deserted retreat of the fox-squirrel . . ."

John James Audubon, p. 272, Vol. VI, "The Birds of America," George R. Lockwood & Son, New York.



WOOD DUCK

NATIONAL AUDUBON SOCIETY

From paintings by John James Audubon



GLOSSY IBIS

NATIONAL AUDUBON SOCIETY

"The first intimation of the existence of this beautiful species . . . within the . . . United States is due to Mr. George Ord, of Philadelphia, the friend and companion of the celebrated Alexander Wilson. It was described by him in the first volume of the *Journal of the Academy of Natural Sciences of Philadelphia*. He

states that 'on the seventh of May of the present year (1817), Mr. Thomas Say received from Mr. Oram, of Great Egg Harbour (New Jersey), a fine specimen which had been shot there.' John James Audubon, p. 50, Vol. VI, "*The Birds of America*," George R. Lockwood & Son, New York.



WILD TURKEY

NATIONAL AUDUBON SOCIETY

"About the beginning of October, when scarcely any of the seeds and fruits have yet fallen from the trees, these birds assemble in flocks, and gradually move towards the rich bottom lands of the Ohio and Mississippi. The males, or . . . *gobblers*, associate in parties of from ten to a hundred, and search for food apart from the females . . . the latter . . . advancing each with its brood of young . . . are intent on shunning the old cocks, which, even when the young birds have attained this size, will fight . . . and often destroy them by repeated blows on the head." John James Audubon, p. 43, Vol. V, "*The Birds of America*," George R. Lockwood & Son, New York.

BIRD FINDING IN TENNESSEE

A Guide to the Great Smokies and Reelfoot Lake

Text by Olin Sewall Pettingill, Jr.

Drawings by George Miksch Sutton

DESCRIPTIONS of bird-finding opportunities in the Great Smoky Mountains and at Reelfoot Lake are outstanding features of the chapter on Tennessee which will appear in "A Guide to Bird Finding East of the Mississippi" by Olin Sewall Pettingill, Jr., with illustrations by George Miksch Sutton.

Soon to be published by the Oxford University Press, this volume represents the first attempt to coordinate information about where to find birds over a large number of states. The author describes some 1,200 bird-finding locations.

In the paragraphs that follow are excerpts* from the chapter on Tennessee. Only a small part of the introductory material on the ornithology of Tennessee is presented here. A number of bird-finding locations in Tennessee are described in the book, but we have selected just the accounts of the Great Smokies and Reelfoot

Lake because of their outstanding interest to bird watchers.

TENNESSEE

Reelfoot Lake and the Great Smoky Mountains — if Tennessee had no places for birds other than these two wilderness areas, the state would be a "must" for the bird finder!

Situated in Tennessee's northwestern corner, Reelfoot is the only large natural lake in the state; it measures 12 miles long and 4 miles wide at the widest point. Its character is extraordinary—in fact, nearly as extraordinary as the way it was created years ago by a series of earthquakes. From its shallow waters emerge majestic cypresses, thick mats of surface vegetation, and vast stretches of man-high grasses, while about the shores grows a swamp forest, dense and almost impenetrable. Exploring Reelfoot is pure adventure, recommended only to the bird finder who has the spirit of Daniel Boone in his make-up. He will have no trails to follow; he must pole a boat or wade in water above his knees, over self-determined routes. The cost in

* Reproduced by permission of the author and publisher. The bird drawings by Dr. George Miksch Sutton are a few of those that will appear in the book and are reproduced by permission of the artist and publisher.



physical effort will be considerable, but the rewards will be generous. He will see American Egrets, Prothonotary Warblers, and other birds in amazing abundance; he will observe such species as the Anhinga and Purple Gallinule near the northern limits of their ranges. Above all, he will have obtained the inexpressible satisfaction of witnessing for himself one of the primary ornithological sights in the eastern United States.

The Great Smokies, towering along the eastern boundary of the state, possess a character in some ways as extraordinary as Reelfoot. Though the mountains are high, with elevations exceeding 6,000 feet, their outlines are softened by a cover of rich forests and, not infrequently, by a veil of grayish mist. Beneath the canopy of the forests lies an understory of shrubs that bloom in riotous color. Birds are everywhere: Carolina Wrens, Wood Thrushes, and Hooded Warblers on the lower slopes; Winter Wrens, Veeries, and Canada Warblers on the higher. Now that the Great Smokies

are embraced by a National Park, fine roads and trails meander from shaded valleys to lofty summits, making easily accessible the best avian haunts. Delightful is the word for bird finding in the Great Smokies!

* * *

GATLINBURG. The Great Smoky Mountains, astride the boundary between eastern Tennessee and western North Carolina, are the backbone of the **GREAT SMOKY MOUNTAINS NATIONAL PARK**, a tract of 461,000 acres. From northeast to southwest for 71 miles, the crest of this range zigzags through the Park, maintaining an altitude of at least 5,000 feet for 36 miles and possessing 16 peaks higher than 6,000 feet.

While most big mountain ranges have a preponderance of barren heights, crags, and escarpments, the Great Smokies are richly blanketed with trees and shrubs. There is no timber line. The peaks either are completely forested or have grassy balds—peculiar openings giving the illusion of an alpine region.

Above 5,000 feet, the trees are largely spruce and fir; from 5,000 feet down to 4,000 feet, they become mixed with hemlock, yellow birch, black cherry, sugar maple, and beech; below 4,000 feet they are almost entirely hardwoods (e.g. red oak, white oak, basswood, sugar maple, beech), except in dry areas, where pitch pine and other pines predominate. The magnificence of these unbroken forests is probably unrivaled in the eastern United States. Within the confines of the Park alone, approximately 40 per cent of the timber is virgin. Shrubs, especially the great white rhododendron, form an extensive undergrowth. In June, when the rose-pink rhododendron, flame azalea and mountain laurel are in bloom at higher elevations, the flower spectacle is at its best.

There are few environments more delightful for the bird finder. With altitudinal variations of 5,000 feet or more, one may journey from valleys where the avifauna is distinctly southern, to slopes and summits where the avifauna is akin to that of northern forests. Yet these vertical contrasts in avifauna are not sharply marked, because a number of southern species invade the higher slopes. Differing in this respect from the birdlife of most big mountain ranges, the Great Smokies offer the bird finder an element of perplexity as well as delight.

On the slopes of the Great Smokies the following species of northern affinities occur during the nesting season; all of them are known to breed here. They are usually found at elevations exceeding 4,500 feet.

Ruffed Grouse (all altitudes)
Saw-whet Owl
Common Sapsucker
Olive-sided Flycatcher
Red-breasted Nuthatch



Brown Creeper
Winter Wren
Veery
Golden-crowned Kinglet
(Mountain) Blue-headed Vireo
Golden-winged Warbler (usually
below 3,000 feet)
(Cairns') Black-throated Blue Warbler
Black-throated Green Warbler (all
altitudes)
Blackburnian Warbler
Chestnut-sided Warbler
Oven-bird (up to 5,000 feet)
Canada Warbler
Rose-breasted Grosbeak
Pine Siskin (irregularly)
Red Crossbill
(Carolina) Slate-colored Junco

These species can usually be observed from the middle of May to the middle of July along any one of three trails reached from State Route 71, which passes from Gatlinburg up the northern slope of the Great Smokies to Newfound Gap on the State Line Ridge. The first trail, beginning at Alum Cave Parking Area, goes to Mt. Le Conte (6,593 feet), a distance of about 5½ miles. The second, starting at Newfound Gap, proceeds to Charlies Bunion (5,375 feet), a distance of 4 miles. The third, commencing at

the end of the Clingmans Dome Highway on Clingmans Dome, leads to Andrews Bald (5,850 feet), a distance of 2 miles. Before attempting to locate the trails, obtain a map at Park headquarters in Gatlinburg. Along these trails, or along the Clingmans Dome Highway, always watch for Duck Hawks and Common Ravens, birds frequently seen in the Great Smokies.

TIPTONVILLE. In 1811-1812 a violent series of earthquakes shook western Tennessee, causing the terrain to crack open in some places, to rise up or to subside in others. The forested land along Reelfoot Creek sank below the country around it and became covered with water, forming Reelfoot Lake as it is known today. Through the clear water, stumps of the submerged forest may still be seen.

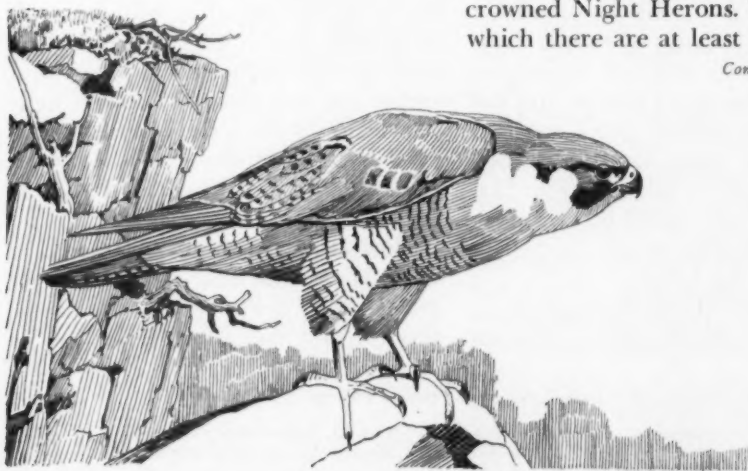
The south end of Reelfoot has open water with a depth of about 20 feet, but elsewhere tall cypresses emerge from much shallower water. Cow lilies, water chinquapins, pondweeds, and pickerel weeds form a luxuriant surface vegetation. From this area of emergent vegetation to the farming country that surrounds the Lake there

is a succession of plant communities. First come stretches of giant cutgrass, then a belt of buttonbrush and black willow, and finally a great wooded swamp (except at the south and east sides) where there are stands of immense thickly growing bald cypress, pecan, sweet gum, water locust, downy poplar, red maple, and white ash.

Reelfoot Lake and most of its shoreline (total acreage, 23,170) is owned by the Tennessee Game and Fish Commission. A part of the property (9,270 acres) has been leased to the U.S. Fish and Wildlife Service as REELFOOT NATIONAL WILDLIFE REFUGE, with headquarters at Samburg. Another part, nearly one third of the property, has been set aside as REELFOOT LAKE BIRD REFUGE, with headquarters at Tiptonville. The remaining portion is a hunting and fishing area.

"Cranetown," in the state-owned Refuge and open to the public, is the greatest feature Reelfoot Lake has to offer the bird finder and must not be missed. This is an enormous nesting rookery of Double-crested Cormorants, Great Blue Herons, and American Egrets, together with smaller numbers of Anhingas and Black-crowned Night Herons. The nests, of which there are at least 1,000, are lo-

Continued on Page 258



The Audubon Sisters



Florence Audubon
1853-1949



*Harriet Bachman Audubon**
1839-1933



Maria Rebecca Audubon
1843-1925

Some recollections about the granddaughters of John James Audubon.

By Leonora Sill Ashton

MEMORIES filled with charm and interest wake in my mind at the mention of the Audubon sisters, Harriet, Maria and Florence, daughters of John Woodhouse Audubon, younger son of John James Audubon.

My younger brother, Reverend Frederick Turner Ashton, was rector of Saint Paul's Church, Salem, New York, from 1911 to 1919. When my mother, brother and I moved into the great rambling rectory there, with its garden, lawn, and barberry hedge stretching down to White Creek, Maria and Florence Audubon were living in a big yellow house on the opposite side of the hedge.

Florence and Maria, falling heir to a considerable fortune, had purchased

a home in this upstate town, and were living in ease and leisurely comfort. Harriet, the eldest of the sisters and daughter of John Woodhouse Audubon by his first wife, came to Salem, N. Y. from her home in Louisville, Kentucky every summer for a visit.

The temperaments of the three sisters were extremely varied. Tall, snowy-headed Harriet, with her soft voice and gentle ways, was intensely musical and clung to the technical ability she had attained in years gone by. Whatever the conditions surrounding her or those who happened to be near her, she practiced on the piano for two hours every day.

Harriet was firm in the belief, as were Maria and Florence, that their grandfather, John James Audubon, was the lost dauphin of French his-

All photographs, unless otherwise indicated, by Dr. Zenas Orton.

**Photographer of Harriet Audubon (center), unknown. Picture, taken about 50 years ago in Louisville, Kentucky, given to author by Maria Audubon.*



Maria (left) and Florence Audubon on garden path to their home in Salem, New York. Child is son of Dr. Zenas Orton, family physician to the Audubon sisters.

tory.* Harriet also held that she (not her half-sisters) was the rightful heir to the throne of France.

Florence was practical, domestic, home-loving, firm in decisions, and bore the brunt of the housekeeping duties with the assistance of Maggie the cook, and a maid.

The dominant character of the three was Maria, "Deedie" as she was known at home and in the village. It was Maria who edited the Journals of John James Audubon, destroying as she worked such portions of the manuscript as she thought best to cast to oblivion! It was Maria, sitting in front of the open fire in the big library of the Salem house, who told you with

her dark eyes snapping that she had "warmed *both* hands at the fire of life," that she missed her youth "sorely at times," but that often again and again in those Salem days there stole over her a warm content at the realization that she was "safe in port."

Of these granddaughters of John James Audubon, it was Maria who inherited most strongly the imagination, roving fancy, passionate loves and enthusiasm of the great birdman and naturalist. As a young child she had known her grandfather. She remembered him as tall and thin with white locks falling over his shoulders.

His portrait, as a young man in his woodsman's clothes, hung over the mantel in the Salem house. Here, glancing up at it from time to time,

* Francis H. Herrick, in his "Audubon the Naturalist," offers practically indisputable evidence that John James Audubon was not the lost dauphin.

with flames of the fire leaping up the chimney in winter, or in summer with the French windows open to garden paths, Maria would tell of the days when children and grandchildren lived with Audubon in his house on his farm by the Hudson.* One of her earliest remembrances of life was that of swinging from the boughs of one of the trees in the orchard and dropping to the back of a horse, led beneath her by an obliging brother.

Audubon was past the years of roving adventure then, but the woods were near, and wherever bird wings stirred or small hurried tracks appeared across the snow, there was discovery and excitement for him. Mrs. John Woodhouse Audubon sometimes remonstrated gently at the treasures her famous father-in-law collected. Snakes' skins, frogs and field mice he brought home. Even in his old age, the wildlife around him held its enchantment for John James Audubon. His granddaughter remembered his sketches, too, of beavers and elks and his paintings of birds—goldfinches, partridges and orioles.

Behind Maria's armchair in the Salem house stretched rows and rows of volumes, each one containing a book-plate with its print of Audubon's drawing of a wild turkey. She often mentioned books, and spoke of authors who visited Audubon in those days on the Hudson.

Bayard Taylor,** "a sprightly little man," was one of the visitors the grandchildren liked best. He told them

wonderful stories and described distant countries and people he had seen in his travels.

"Ik Marvel" (Donald G. Mitchell)* was a frequent visitor and a warm friend of the household. The friendship between the two families continued through the years. Miss Lizzie Mitchell, sister of the essayist, often visited Maria and Florence in Salem.

Maria also inherited from her grandfather an alert, versatile mind. She loved books, people, conversation, newspapers, knitting and fancy work, but above all, and best of all, she loved flowers.

As birds were for Audubon, so for his granddaughter, Maria, flowers were the crowning passion of her days. In her flower beds during the chilly northern spring, snowdrops and scillas bloomed, followed by daffodils, tulips, lilies of the valley, garden lilies, oriental poppies, roses, heliotrope, mignonette, forget-me-nots, shasta daisies, phlox, pansies, sweet alyssum, zinnias and chrysanthemums—a radiant mass of color and fragrance until winter came and Christmas roses opened.

In the loves which swelled Maria's heart, a close second to the flowers was the Episcopal Church. She kept a list of flowers available for altar decoration for every Sunday in the year. During the seasons, wild or cultivated flowers seldom failed her on the dates set aside for them.

It was Florence who inherited her grandfather's love for birds, and from the bluebirds of the early spring to

* The site Audubon's home and farm, bought in 1841, was then a suburb of New York City called Carmansville. Today the old site of Audubon's farm, which he called "Minnie's Land," is within New York City, from 155th and Broadway to 165th Street and Riverside Drive. It is covered by apartment houses and a large church.

** Noted as a poet, but wrote a book of travels in 1846, "Views Afoot," which entranced Maria Audubon when she was a child. Many of Taylor's poems were about nature. He was born in 1825 in Chester County, Pennsylvania and died in 1878.

* Noted scholar and essayist, who wrote under the pen name of Ik Marvel. He was born in 1822 and died in 1908; was the author of "Reveries of a Bachelor," and "Dream Life," books of essays about rural life that were popular during the 19th century. Mitchell was at one time editor of the Easy Chair section of *Harper's Magazine*.

the last warbler of the fall, what a singing wilderness those two Salem gardens were!

Owing to Maria's dislike for cats, there was not one in the neighborhood. The birds came unharmed and unafraid. Cliff swallows bored their holes in the clay banks of White Creek and flocks of cedar waxwings fed on the barberries. Indigo buntings and scarlet tanagers flashed their vivid colors in the air and brown creepers spiraled up the trunks of the trees. Thrushes and rose-breasted grosbeaks sang in the shrubbery and goldfinches hung on tall spikes of flowers.

The warblers which flitted into those gardens were too numerous for a complete list of them here. Outstanding in my memory, however, are the pine warbler, prairie warbler, the beautiful little magnolia, chestnut-sided and the sweet-voiced, black-throated green warbler. There were the vireos, too, and sometimes on the narrow shore which bordered White Creek, a spotted sandpiper tipped and

teetered, its tail moving almost continuously up and down.

With winter came the chickadees, juncos, nuthatches and downy and hairy woodpeckers. Haunting the suet ledges, these were often driven away by bold blue jays, only to return persistently for their own swift pecks at the white frozen fat.

Yes, it was Florence, the youngest of the Audubon sisters, whose eyes were instantly aware of every flashing wing in those gardens—the one of all the three who loved birds the best.

For many years after leaving Salem, I corresponded with Maria and Florence, but during the last decade Florence's great age prevented her from writing. Over the fireplace in the Salem home of the Audubon sisters were carved these words—"Think and Thank." Whenever I think of that home and its occupants, I thank the kind fate which gave the members of our family eight years of intimate companionship with the granddaughters of John James Audubon.

Former home of Maria and Florence Audubon in Salem, New York, now occupied by Dr. Zenas Orton and family.



*A well-known English photographer tells
some of his trade secrets in*

The Photography of Birds

By G. K. Yeates

THE technique of bird photography is today so well known that it is unnecessary to give an outline of the methods by which the man behind the camera gets close enough to his quarry to take its picture. There are many forms of blind, or small tent, which usually serve as the means of concealment. Naturally, some are refinements, others may be rough and ready, but of them all, there is only one real test of their usefulness. Do they serve their

purpose? If so, they are in order, and it may be said at the outset that just as good results can come out of four pieces of canvas erected on four poles as out of an elaborate palace of a blind. Most of us are aware that the blind must be introduced slowly to the bird.

The use of the camera inside the blind is a different story. No photograph is the purely automatic proceeding that so many people imagine. It is true that if you point a lens in any direction and open the shutter, it will

All photographs by the author.

The author's hide (blind) in typical nightingale habitat of an English woodland.





Night heron on its nest in the Rhone Delta of southern France.
Photographic data—Cooke Aviar 8¼" lens; 1/10 second at f16.

record *something* on the sensitized film behind. The art of making a picture, however, lies in the *control* of the lens, shutter, and film.

First and foremost, the would-be bird photographer must decide in his own mind what sort of result he wants. If it is merely a recognizable image of his bird, he can be easily satisfied. Let it be understood from the start, there is no difficulty about getting within photographic range of a bird, but the photographer is wise if he sets himself higher standards from the beginning. He should require, in his photographs, accurate feather detail, and above all, the whole should make a picture—not just of the bird itself, but of the bird in its immediate surroundings. Here experience, technique and equipment count and make the difference between a mere record and a pleasing picture.

"Schools" of Bird Photography

As in all arts, there are "schools" of bird photography. The most obvious of these can be seen by a glance through various books or photographic exhibitions. On the one hand are those photographers who like a huge image of the bird, often with its beak in one corner of the print and its tail in the other. This school also seems to favor a very low angle, or view-point of the bird, for the lens, an effect which diffuses the background by a pronounced out-of-focus area. This helps to emphasize the bird and to make it stand out in relief. It has, however, a grave disadvantage. For optical reasons the lens at a low view-point will not cover, even at a small aperture, a great depth of focus. The result is that the foreground, as well as the background, is an out-of-focus blur. This is an atrocious eyesore, and with-

out question ruins any photograph's possible pictorial merits.

The other school, of which I am a follower, insists that the foreground of the photograph must be tolerably sharp, from the bottom rebate of the print up to and including the bird. This is achieved by a slightly higher lens view-point and the use of swing-back (a standard adjustment on the view camera) and by very small apertures of the lens and, consequently, very slow exposures. Such methods mean that the background is not as diffused as with a low view-point, and the bird as a result stands out less conspicuously in the picture. You cannot have it both ways—except under exceptional circumstances. You must choose between the two. But one thing I beg—do not pander to getting a photograph that is all bird, *and nothing but a bird*. A living creature which lives in a habitat surely wants recording with as much of that habitat around it as the limitations of the photographic process and the size of the print will permit.

The Test of a Good Bird Photograph

Because your subject is a bird, its photograph *must* show feather details. One test of a good bird photograph should always be that the species is identifiable by a competent ornithologist, without the need of a picture title. Good feather detail demands a large original image on the negative, and a lens giving the sharpest possible definition. Therefore, get close to your subject. Don't, of course, sit in the nest beside it. If you overdo it, you will run into the problem of depth of focus. Try to make your blind so that the focal length of your lens will give you an original image of about one inch on a quarter-plate negative.

We are thus already begging the question of the best equipment for the job. To this problem there can be no cut-and-dried answer, for all photography is very largely a compromise. It is a compromise which begins with the lens, which is subject to all sorts of aberrations that can only in part be corrected by the optician, and ends with such difficult problems as depth of focus* and shutter speed. Again, the

* For an explanation of photographic terms, see Richard B. Fischer's article, "Beginners Can Photograph Birds," *Audubon Magazine*, May-June and July-August 1950 issues.

equipment of the man who requires birds in flight will be very different from the photographer who is content with bird portraits at the nest.

What Camera Type Shall We Choose?

Let us take the chief items one by one. The need of a large original image of the bird with some surroundings as well, which I believe to be fundamental, means that the modern miniature (35 millimeter) camera is not greatly favored for bird photography. This is no condemnation of these

Loon photographed in Iceland, June 1949. Tessar telephoto lens, 32 cm.; 1/40 second at f22.



remarkable instruments. They can take a hundred and one types of photographs quite outside the range of the larger cameras. It is, however, beyond even their great potentialities to expect a 35-mm negative of a bird to enlarge well. The more is the pity, for of all photographers those who photograph birds would most welcome the use of these light cameras. But the proof of the pudding is in the eating, and no one with eyes in his head could ever agree that the detail of the best enlarged miniature prints could compare with a well-executed result from a larger camera.

The two most popular sizes in Britain are the $\frac{1}{4}$ -plate and the 5" x 4".* I use the former, but if I had my time over again, I should adopt the latter. He was a wise man who, when asked the best camera for any photographic job, said "the largest plate camera you can get to the spot!" The type will depend on the object. For bird-portraiture at the nest there is no question that the old-fashioned field- or square-bellows camera gives the best results. Many people laugh today at those ancient antiquities, but for their specific purpose there is still nothing to beat them. They are cumbersome and heavy, of course, but they have two great advantages. Focusing is done directly on a ground-glass screen, so that the photographer can see exactly what he is taking, and thereby visually ensure that the distribution of his focus is arranged to best advantage. They carry the invaluable swingback, by the subtle use of which foregrounds can be brought into focus in a manner impossible with cameras with a rigid plate-carrier set at right-angles to the lens.

* Many of the older American nature photographers used the large 5 x 7 and even 8 x 10 view cameras. Present day American bird photographers seem to favor the 4 x 5 Speed Graphic and Graflex or a 4" x 5" view camera with its many adjustments.

Such cameras are no use for birds in flight, for focusing takes a long time, and they neither carry a fast shutter nor can be manipulated in the hand. For these same reasons they are not suitable for stalking birds. For such tasks the reflex camera is to be advised. However, the introduction of high-speed flash photography has in part removed the first of these drawbacks, so long as the camera can be set up on a tripod and the flight photographs taken at fixed points at or near the nest, which in fact is the normal method of working with the new equipment.

Lenses, Shutters and Tripods

The camera decided, the rest of the equipment more easily falls into place. The choice of a lens needs only one word of caution. *Never* use a poor lens. Bird photography calls for much hard work, patience, time, and often travel and money. It is ridiculous to spoil the ship for "a h'aporth of tar" by using an inferior lens, which can never give you the best results. And again, do not think that you must use a telephoto lens. They are indeed very useful pieces of equipment, but, except under exceptional circumstances, when it may be impossible to get close to your subject either because it is shy or because the nature of the ground prevents it, the bird photographer usually gets in closer and uses a normal anastigmat of a focal length of about 8 to 8½ inches. The best of such lenses give better definition than the best of telephotos, which have inherent in them a number of optical problems, too detailed to mention here, but of which the most significant is their narrow field of focus.

Shutters are not so easily recommended. Where exposure has to be

Flamingos of Rhone Delta, France. Tessar telephoto lens, 32 cm.; 1/40 second at f45.



fast, for birds in flight, a focal plane shutter still seems to be the best answer, but for slower exposures at the nest the finger-operated slow shutters of the type of the German "Luc" are extensively used, by British photographers at least.

The truth is that there is no really satisfactory camera shutter for the bird photographer who requires both speed and silence. Speed means noise, and noise scares a wild bird.

There is also another insignificant, but very important piece of equipment to be considered—the tripod. Whenever possible, mount the camera on a tripod. You *must* do so in a blind, but always use a tripod, unless it is quite impossible. The man is not living who can hold a camera in the hand as steady as a tripod can, and if there is one great enemy to crisp definition, which is the secret of good bird photography, it is wobble.

Fast and Slow Exposures

Perhaps the most frequent mistake made by bird photographers—I refer to portraiture work at the nest—is to think that because their subject is a fast-moving one, they must use a rapid shutter-speed. This means they must also use a larger aperture of the lens, which in turn results in a narrower band of focus. Thus very soon they find themselves producing pictures with that horrid out-of-focus foreground. In order to correct this last trouble, there is only one answer—a small aperture, usually f 16 or f 22. It follows by photographic law that, even with modern fast emulsions, the exposure must be slow, especially as many species do not nest where the light is very good. I suppose my average exposures are between 1/10 and 1/20 of a second, but often because of nest

sites in dense shade, I have to give short time exposures, while on other occasions, open, well lighted sites will permit me to give as fast as 1/40 of a second exposure.

When to Photograph the Bird

Unfortunately, you have no control of your bird. You cannot tell it to stop and hold a position. It is in fact a creature that seems to be in constant motion. Closer observation will show you that this is not really true. There are often moments when the bird keeps still. The answer to the problem is not to despair, but to watch carefully, and to expose at the time when the bird is most likely to remain quiet. For example, it is useless to try to "stop" a small passerine bird as it reaches its nest with a beakful of insects for its young ones. It has then only one idea—to feed them. But a few seconds later it behaves differently. The food delivered, it stands still, takes a look around, or waits for excreta to be removed.

This is your moment. I have never yet tackled a bird which did not give some opportunity to photograph it, at rest, at some time. It may be argued that your failures will be numerous. It is true that in many exposures your quarry may have moved, and the negatives will have to be thrown away. But if in a dozen plates or films, you get three or four photographs which are sharp all over the print, is that not better than having your bird crisply defined, but the band of focus so shallow that it spoils the picture?

I hope you will think like that, for in it lies the secret of the production of the many masterpieces of bird photography we see today.

NEWS

OF WILDLIFE AND CONSERVATION

By John H. Baker

President of the National Audubon Society



Wild Nenes Sighted

THE Hawaiian goose, or nene, is nearly extinct. It is not known how many wild individuals exist, and it would seem important to try to find out their number, the areas they now in-

habit and the nature of the hazards with which they contend.

Mr. Herbert H. Shipman, Hilo, Hawaii, has for quite a few years maintained a number of these geese in captivity, but their production of young has recently been none too satisfactory. He loaned a number of his captive birds to the Board of Agriculture and Forestry of the Territory of Hawaii, which maintains them under excellent conditions of food and cover in pens especially constructed for them at Pohakuloa,

on the saddle at the base of the cone of Mauna Kea. Only one pair of the Pohakuloa captives has successfully produced young in the 1950 and 1951 seasons. Three of the captives were sent to the Severn Wildfowl Trust in England, and apparently have produced no young as yet.

News has just been received of the sighting and photographing on June 1, 1951, of seven wild Hawaiian geese within the boundaries of the Hawaii National Park on the Island of Hawaii at an elevation of about 6,200 feet on the slope of Mauna Loa. On April 1, 1949, a group of 12 and another group of five (perhaps included in the 12) were seen in the Hawaii National Park. Three were subsequently observed on the slopes of Haleakala in Maui.

The Hawaiian goose is by nature a very gentle bird. The dangers with which it has to contend

Mr. Herbert H. Shipman, Hilo, Hawaii, has kept a number of nenes in captivity, but their recent production of young has been none too satisfactory. Photograph courtesy of Territorial Board of Agriculture and Forestry.



are many, presumably including the introduction into its chosen habitat of feral pigs, goats and sheep, as well as cattle, not to mention roaming wild dogs, mongooses and some probable illegal take by two-legged mammals. This goose is fully protected by law of the Territory of Hawaii.

At the instance of the Directors, your President went to Hawaii in March where, through the courtesy of the Board of Agriculture and Forestry, the Hawaii National Park and Mr. Shipman, he had opportunity to confer as to possible plans better to assure the survival of this species and to view at first hand the captives and the general character of the habitat of the wild birds. The Society has suggested to the Board of Agriculture and Forestry that field research study, as advocated by its Fish and Game Division, be approved. It is our feeling that the existing captivity project may well prove futile unless information be obtained as to the character of the hazards with which the wild birds have to contend. These same dangers would have to be met by any young birds raised in captivity and liberated. It was suggested that an airplane survey be made soon in an effort to determine how many wild birds now survive in what areas; this as a basis for later more intensive field work on the ground. Fortunately, Pittman-Robertson funds, to finance a two or three year field research project as to the ecology of these geese, are available, provided the Board of Agriculture and Forestry officially seeks approval of such use. It is our hope that the Board may soon officially endorse this project and thus greatly enhance the chances of success in preventing the extinction of this interesting goose, one of the endemic species of birds indigenous to the Islands.

Bad Luck For Crip And Jo

WHEREAS the wild whooping cranes made in 1950 their best record in recent years in the production of young, and our best wishes went with them for a successful breeding season in the far north in 1951, we regret to tell you that the captives, Crip and Jo, have again met with nesting failure in their enclosure on the natural marsh at the Aransas National Wildlife Refuge in Texas. They had chosen a nest site that was low and exposed, and unseasonable tides made the situation precarious. On the night of May 14, with the wind registering up to 40 miles per hour, the water rose such that the nest was nearly submerged,

with the one egg no more than one-quarter inch above the water; it was wet, and the wind was splashing it with small waves. At this point, the Refuge manager took a calculated risk, deciding that he would add prairie hay to the top of the nest, so as to raise the egg well above water. He maintained a watch until one of the birds accepted the nest and began incubating the egg at 12:25 a.m., May 15. Returning at 6:00 a.m., he found that all was not well, that both birds were alternately probing into the edges with their beaks and incubating an apparently empty nest. Thinking that the egg might have been pushed into the nest material, he again inspected the nest, and found that although it was dry and well firmed, it had been altered by the birds and no longer contained much of a central depression. The remains of the egg were found in the water within a foot of the base of the nest. It had been broken. The Refuge manager and his wife were broken-hearted at this development, though realizing that, had they not taken the calculated risk, the egg would have been lost anyway, as the water level went quite a bit higher than the egg had been; all of which tends, perhaps, to demonstrate that the maximum chances of preventing the extinction of the whooping crane depend upon successful raising of young by the wild birds in their far northern summer habitat.

Hoover Commission Proposals

NUMEROUS bills have been introduced at this session of Congress designed to carry out recommendations of the Hoover Commission on Reorganization of the Government.

One of these, S.1143, which has been referred to the Senate Committee on Expenditures in the Executive Departments, would transfer to the Department of the Interior the flood control and river and harbor improvement functions of the U. S. Engineers and the Mississippi River Commission, as well as the power-planning functions of the Federal Power Commission. It would give to Interior jurisdiction over public building, including hospital and civilian airport construction, a responsibility which it would seem to us most inappropriate for that department of the federal government primarily concerned with conservation of natural resources. It would set up within the department a Recreation Service which would include the administration of parks and monuments, wildlife and "game fisheries." In our opinion this bill will not pass without a great battle. We are

sympathetic with the effort to end the damaging rivalry between the U. S. Engineers and the Bureau of Reclamation, but by no means certain this bill provides the most desirable method.

S.1141, referred to the Senate Committee on Interstate and Foreign Commerce, would transfer the commercial fisheries activities of the Fish and Wildlife Service to the Department of Commerce, leaving the former, in so far as fishery matters are concerned, jurisdiction only over "game fisheries." This would reverse the transfer a few years ago of commercial fishery matters from Commerce to Interior. It seems to us there is no adequate reason why this should be done. We believe in unity of administration of a single resource.

S.1149, referred to the Senate Committee on Expenditures in the Executive Departments, deals with reorganization of the Department of Agriculture but includes a provision whereby all the functions of the Bureau of Land Management, except those dealing with mining and minerals, would be transferred from Interior to Agriculture. It involves the commendable objective of furthering centralization of administration of federal grazing lands. We, however, favor administration of federally owned lands in one department, and the bulk of them are now administered by Interior.

H.R.3318, referred to the House Committee on Public Works, would provide for a Board of Analysis for Engineering and Architectural Projects "appointed by the President from among persons . . . in the engineering and architectural fields." This Board would have coordinating and advisory capacity, but no administrative authority. As this Board would consider

all contemplated major public projects involving flood control, water supply, irrigation, reclamation and hydro-electric power, it would seem that the bill should be amended to provide for inclusion of representation on the Board of one or more persons able to present points of view of those concerned with soil, water, plant and wildlife conservation in the public interest.

With relation to the recommendations of the Hoover Commission and the administration of natural resources, you will remember that the full Commission unfortunately took a position differing from that recommended to it by its own Task Force, and that the national conservation organizations, almost without exception, back the views of the Task Force and not those of the full Commission. Moreover, there was a minority report of the full commission. Therefore, it is likely that S.1143, 1141 and 1149 and H.R. 3318 will not find the sledding in Congress as easy as did other government reorganization bills, of less controversial content, that were passed upon at the previous session of Congress.

Nominating Committee Appointed

THE official Nominating Committee appointed to recommend, at the Annual Members' Meeting, November 13, 1951, a slate of directors for possible election for a three-year term, this year consists of: Mrs. Robert C. Wright, Chairman, Haverford, Penna., Mrs. Francis B. Crowninshield and Mr. Gayer G. Dominick.

List of Nature Sanctuaries Available

The Nature Conservancy announces completion of *Nature Sanctuaries in the United States and Canada*. This publication is an inventory of all important areas having natural history values that are at least partially protected under public ownership.

The inventory lists a total of 691 nature sanctuaries . . . location, size, extent and kind of disturbances, type of vegetation, and principal mammals. Areas are arranged according to major vegetative types (decid-

uous forest, prairie, etc.) and introductory discussions analyze the status of sanctuaries in each of these principal types. Outline maps showing the sanctuaries for each type are included. The inventory is published by The Wilderness Society as the Winter 1950-51 issue of *The Living Wilderness*. Copies may be obtained for 50 cents each from Dr. S. Charles Kendeigh, Vivarium Building, Wright and Healey Streets, Champaign, Illinois.

Waterfowl Show Upward Trend

The 1951 annual inventory of North America's migratory waterfowl, conducted from January 11 to 13 on the wintering grounds of the birds, revealed an upward trend sufficient to about offset the decline reported as the result of the 1950 inventory, says the U.S. Fish and Wildlife Service.

An analysis of all the data turned in by the observers indicated that, by flyways, the Pacific Flyway had a wintering waterfowl population somewhat bet-

ter than last year, particularly in geese. The Central Flyway was down slightly. The Mississippi Flyway showed a good recovery from 1950, while the Atlantic Flyway also indicated some improvement for the second consecutive year.

Of all the waterfowl seen in the inventoried areas, ducks comprised about 75 per cent of the population; geese, 13 per cent; coots, about 8 per cent; and brant and swans, each less than 1 per cent.

cated in the wooded swamp, from 60 to 100 feet up, in the tallest cypresses.

Poling a boat to Cranetown is a long and back-breaking task. Going on foot by wading in from the west shore is the better method. To do this, drive north from Tiptonville, on the southwest corner of the Lake, taking State Route 78. Watch for Dickcissels on the telephone and fence wires along the way. About 3½ miles from Tiptonville, turn right on a gravel road and drive as far as the road is passable. Then strike out eastward on foot, passing through brush until an 8-foot deer fence is reached. Along this fence, at regular intervals, there are markers (i.e. concrete pillars about a foot high, with brass caps numbered consecutively, starting with Number 1 at the north end of the fence). Follow these markers along the fence to Number 41, climb over the fence (permission is not necessary), and continue eastward. Cranetown is half a mile distant and can be heard long before it can be seen. The best time to make the trip is between 10 May and 15 June, when the water level is low enough so that it is not necessary to wade deeper than the waist. The water is not cold, and the trip in and out can be made easily in 4 hours. Always be careful not to get too close to water moccasins. Be sure to carry a pocket compass.

Cranetown is not the only reward for the wet jaunt through the wooded swamp. Along the way one will see Black Vultures and Wood Ducks,

which nest in the hollows of some of the big cypresses; also Green Herons, Red-shouldered Hawks, Pileated Woodpeckers, and great numbers of Prothonotary and Parula Warblers. Barred Owls are common in the cypresses and will perhaps be heard hooting in the daytime. Bald Eagles and Duck Hawks will probably be observed, for both species are known to have aeries high in the cypresses. And there is always a possibility of meeting a Little Blue Heron or a Yellow-crowned Night Heron, since both species breed here in small numbers.

Birds nesting in the parts of Reelfoot where there are aquatic grasses and other emergent vegetation are Pied-billed Grebes, American and Least Bitterns, King Rails, Purple Gallinules (a few), Florida Gallinules, and Coots. Least Terns, which colonize the sand bars of the near-by Mississippi River, frequently visit the Lake for courtship and feeding purposes. All of these birds can be best observed on the east side of the Lake, where there are suitable habitats close to shore from Samburg north for a mile. To reach Samburg from Tiptonville, drive east on State Route 21 to the junction with 22. Turn left on Route 22 and proceed to Samburg.

From the middle of October to April, Reelfoot is a haven for transient and wintering waterfowl. Mallards and Lesser Scaup Ducks are the most abundant. Others appearing regularly are Canada Geese, Black Ducks, Gadwalls, Baldpates, Pintails,

CENTENNIAL STAMP FAVORITES—Ballots returned by purchasers of Audubon Centennial Stamps indicate that the Baltimore oriole is by far the most popular of the 24 paintings that are reproduced as full-color miniatures.

The five most popular subjects are: Baltimore oriole, summer tanager, snowy owl, mallard duck, and wild turkey.

Green-winged Teal, Blue-winged Teal, Shovelers, Ring-necked Ducks, Canvas-backs, Ruddy Ducks, and Red-breasted Mergansers. Wood Ducks and Hooded Mergansers, the only ducks breeding at Reelfoot, are more numerous in the fall.

Not infrequently in late August and September a few flocks of Wood Ibises wander up the Mississippi Valley and put in an appearance at Reelfoot. Their habit of soaring high over the Lake makes it impossible to miss them. Late in the fall, hordes of Red-

wings and smaller numbers of Rusty Blackbirds, Common Grackles, and Brown-headed Cowbirds arrive to pass the winter. When the population has reached its maximum, the evening gathering of these birds to roost in the cutgrasses, willows, and buttonbushes is nothing short of spectacular.

Since Reelfoot is frequented by sportsmen during the fishing and hunting seasons, there are many kinds of accommodations available (restaurants, cabins, hotels, and camping grounds) on all sides of the Lake.

ANSWERS TO QUIZ

1. The bat used radar long before it was discovered. As it flies, it emits a series of sharp cries unheard to the human ear but audible to itself. As the cries bounce off various objects, they warn the bat of the approach of obstructions. In experiments, blindfolded bats could still fly perfectly, but bats with their ears plugged up flew into something at once.

2. Both armadillo and turtle antedate the tank.

3. Before modern warfare invented it, the chameleon was a master of camouflage. It can rapidly change its color from green to yellow and gray.

4. Some deep sea fish have their own electric plants. They are equipped with electric stingers, with lighted "portholes" along their bodies and lanterns in their jaws or on their tails. Many, the electric eel particularly, have electric "batteries" strong enough to deliver a lethal shock.

5. Australian spiny anteater, known as the echidna, popularized spurs before the cowboy and caballero glorified them, except that the echidna's had the utilitarian purpose of defending it against enemies.

6. Jet propulsion is used by the squid—it sucks and expels water to move along.

7. The flying squirrel spreads its forelegs and hind legs outward so that the skin along its sides forms a parachute as it flies from tree to tree.

8. The hummingbird is nature's tiny helicopter. It can hover and even fly backwards.

9. Birds can brake with their tail feathers exactly as planes do with flaps.

10. Scorpion's tail is a perfect hypodermic needle. Like a surgeon he uses it for injections, except that he does not much care whether the patient lives.

11. In biting, the snake applies a merciful function of which medics have known only since the 1800's—anaesthesia. It paralyzes and desensitizes its prey before eating it.

12. The army signal corps would be amazed if it watched the pronghorn antelope: it signals with its tail to tell of danger.

13. Suction cups so popular today were known in nature millions of years ago. They are especially prevalent among marine creatures like the sea snails. California abalones—the giant sea snails—have them. Their suction on the rocks to which they cling is so tremendous, professional abalone divers have to pry them off with a tire iron.

14. Even before the blunderbuss was invented, the bombardier beetle would turn its rear on the enemy and go to town with blasts for which it has been named. It combines a gun blast with chemical attack.

15. The caribou and the snowshoe rabbit have nature's patent on snowshoes. Both have the type of foot which skims over the snow.

16. The Egyptians are among some of the most ancient nations to use swaddling clothes, but the silkworm made a cocoon long before mankind arrived on earth.

Audubon Guide To Bird Attracting

A department in which our readers can share with each other what they have learned about how to attract birds.

In this issue, three of our readers tell of their experiences in attracting birds.—The Editors

"A wren carried nesting trash into the gourd which served as a chickadee feeder the previous winter." Photograph by Allan D. Cruickshank.



We Planned and Planted for Birds

It is not necessary to live in a wilderness to have a garden which is a good bird habitat. At this moment, on June 5, our suburban lot—60 feet by 150 feet—is filled with the color and fragrance of peonies, irises, roses, weigela, mock orange and beauty bush; dianthus, centauria, sweet william and other perennials. The beauty bush conceals the nest of a catbird; a song sparrow trills above the weigela and his nest is somewhere in the border below as it has been for the past three summers.

A robin has her second nest in the forsythia which glorified the driveway in early spring. Her first nest was in the robin shelter placed at the back of the house. Two pairs of cardinals, feeding young in the vicinity, make quarter-hour trips to the feeders and baths in the backyard. A wren is carrying nesting trash into the gourd which served as a chickadee feeder last winter, and the goldfinches are already visiting the dianthus and centauria to see if the seed is ready for them.

This happy state for birds on our premises did not happen by accident, but by careful design and planning. When my sister and I bought this place in August, 1944, there wasn't a seed or a berry to attract a bird, and neither a tree nor a shrub suitable for shelter or nesting. We began at once to plan and plant. We were handicapped by limited planting material in local nurseries, gas rationing and an acute labor shortage, but despite everything, in one short year we had changed the picture entirely.

The backyard was fenced and enclosed by a green wall of honeysuckle, shrubs and low trees, in front of which we planted bulbs, lilies, perennials and annuals. In all of our planting plans we included the birds. The shrubs and trees for berries included cotoneaster, highbush cranberry, bush honeysuckle, dogwood, barberry, Washington hawthorn and mountain ash; the

READERS!

(The editors of Audubon Magazine have planned to devote at least one issue each year of the magazine's bird-attracting department to letters from readers, and invite you to become one of our regular contributing guest columnists of this department. Your letters will be printed in order of their receipt here and their excellence of content. Please address them, with photographs and sketches illustrating your planting arrangements, bird feeders, birdbaths, etc., to Audubon Magazine, 1000 Fifth Avenue, New York 28, N. Y.)



"We grew sunflowers for the birds."
 Photograph by Henry H. Graham.

seeding perennials included dianthus, centauria, larkspur, sweet william and coreopsis. These are planted in clusters and when they finish flowering and come to the final unkempt seedling stage, they are pulled out and tossed in a pile out of sight, but where the birds can find them. We have flowers for hummingbirds, too—columbine, petunia, nicotiana, bergamot, coral bells and day lilies.

Even before our own comforts were assured in the house, we set up in the backyard a large pedestal birdbath of Bedford stone. When the rock garden was completed we placed another naturalistic stone bath there on the ground. Water and food we could and did offer the birds immediately; shelter we could only promise for the future. At first we saw starlings and house sparrows only, but one day a family of bluebirds bathed in the pedestal bath. We made a note to entice them with nesting boxes the following spring.

During the first winter our feeders attracted chickadees, downy woodpeckers, and an occasional cardinal, but our bird population did not increase much until spring brought greenery and flowers and a more hospitable look to our premises. Our trees and shrubs were not big enough for nesting, but we had two pairs of bluebirds in our birdhouses, and one pair of wrens. A robin pair built a precarious nest on the feeder bracket, scorning the robin shelter we had provided. That first summer we were most grateful for the birds that will accept ready-made houses. The hummers flitted among

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Illustrated: Cedar waxwing. We also have the common redpoll, orchard oriole, hermit thrush, boat-tailed grackle, white-throated sparrow, carbonated warbler, and white-crowned pigeon.

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the flowers, and the goldfinches filled the garden with color and song until frost came. Late in the summer a song sparrow nested in the honeysuckle vines and has returned to that green haven each year.

Two years ago we bought the vacant lot adjoining us on the back in order to have a place to expand and experiment. There we have our flower cutting garden and a planting of old-fashioned roses and wild roses. The birds have their own garden of annuals and perennials, and a "tangle" for food and shelter which includes pink tartarian honeysuckle, red chokeberry, Hanson's bush cherry, Russian olive, red and white snowberries, red twig dogwood and multiflora roses. There we grow sunflowers, harvesting the heads for winter feeding, but leaving some for everyday consumption as they ripen.

We do not aspire to attract unusual birds to our garden, but we do long for a tree to grow tall enough to satisfy the Baltimore oriole that looks us over every spring. We wish the mockingbird we fed all winter would nest and sing in our garden in summer. A pair of cedar waxwings carried off a large swath of Spanish moss, hung out for nest-making, and we were sorry we had no suitable place for them to use it. But every year when we prune the shrubs we find from three to six hidden nests, and realize that we have had more nesting guests than had been counted in our census.

Since our garden is very small we live at close quarters with the birds, and they have become very tame. The robin that nested on the robin



"One day a family of bluebirds arrived."
Photograph by Allan D. Cruickshank.

shelter a few steps from the kitchen door, soon came to the doorstep to hint for the "handouts" she had learned to expect from inside. She accepted food from our hands as she sat incubating her eggs, and later her fledglings were fed, literally, from hand to mouth.

Richmond, Indiana

EDWINA MORROW

***Elaeagnus* for Birds**

One shrub, or perhaps it might be called a small tree, which I value highly for attracting

Fruits of autumn *elaecagnus*, *Elaeagnus umbellata*, photographed by Mrs. Howard G. McEntee.

"In our planting plans we included mountain ash." Photograph by Hal H. Harrison.



fall birds, is *Elaeagnus umbellata*, or Autumn Elaeagnus. Its red berries are relished by bluebirds, hermit thrushes, cedar waxwings and other birds. Branches broken off and kept in a cool place provide food most of the winter for bluebirds in the vicinity that visit my feeding station. One other nice feature of this shrub is that the leaves remain on until well into December and are about the first out in the spring.

Mrs. HOWARD G. McENTEE
Ridgewood, New Jersey

"Rockery" Birdbath

In response to your suggestion in the May-June 1950 issue of *Audubon Magazine*, I am enclosing a snapshot of a rockery birdbath which is very popular in our garden.

Place on the ground a circle of rocks about two feet high, leaving the center open. Fill the center with prepared soil, and rock garden plants may be laid in as you build. On top the container, or bath, is placed. For mine, I used the inverted cover of a metal garbage can.

Many birds use this type of bath all summer—robins, flickers, catbirds, purple finches, warblers and chickadees.

Raised above the ground as it is, this bath gives the birds protection from prowling cats and makes a decorative, interesting spot in a garden.

IRMA A. WERNER

Cumberland Mills, Maine

Rockery birdbath photographed by Irma A. Werner.



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FLAMINGOS OF INAGUA

Continued from Page 217

probably older males that made a regular circuit of the unconcerned multitudes. Two thousand brilliantly colored heads might be down, engaged in sifting the muddy floor of the pond, but these guards had their heads *up*, bills tilted skyward, yellow eyes watching. They strutted along as a group, 15 or 20 of them, their heads turning halfway to the left and back again as they walked, their strides wonderfully graceful and their bearing filled with the importance of their task.

The flamingo population was scattered over some 12 square miles of the Upper Lakes region. It was impossible to obtain counts of the closely-massed groups, but the thinner ranks of feeding birds were easily counted. A conservative estimate of the various units and flocks totaled 7,500 flamingos. My companions thought this figure too conservative and they may have been right. Certainly there were no less than that number of these birds on Inagua in the spring of 1951. Nearly all of them were in brilliant plumage. We are keeping in touch with Sammy, our guide, who will, in turn, keep a careful eye on the flamingos and report to us on their progress and success in nesting.

According to the 1931 A.O.U. Check-List of North American Birds, the flamingo breeds locally in the Bahamas, Cuba, Haiti, Yucatan, Guiana and Peru. We are now certain of only two major nesting colonies—Yucatan and Inagua. We trust that other colonies survive in southeast Cuba, on Andros and possibly on Abaco Island in the Bahamas, north of Andros. When we have assembled full data, it will be evident that the American flamingo has been shockingly reduced.

Both the Bahamian and the Cuban governments have evidenced a growing interest in the welfare of their flamingo flocks, but real protection is yet to be provided. Thanks to the interest and generosity of Senor Joaquin Roche of Merida, Yucatan, the splendid Mexican colony is now given warden protection and last season it succeeded in rearing more than 1,000 young, in spite of early attempts at egging by uninformed natives. On Inagua, the Ericksons have assured us that they view the flamingos as quite as precious a natural resource as salt, the dashing herds of wild jackasses and the deep blue waters that surround that interesting island. In this feeling they are joined by the resident Commissioner of Inagua, Mr. J. V.

Brown, who represents the British government on the island.

It is our hope that this growing recognition of the need and desirability for safeguarding the American flamingo will spread to every corner of its range, and that this magnificent bird may prosper and increase, to the lasting benefit and satisfaction of all who believe that our natural beauties are worth preserving.



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Book Notes

By John K. Terres

BRITISH WADERS IN THEIR HAUNTS

By S. Bayliss Smith, *The British Book Centre, 122 East 55th Street, New York City, 1950. 7 1/2 x 9 7/8 in., 162 pp. Illus. with 53 photographs by the author, 26 by other photographers, and three plates of waders in flight by Basil Laker. \$4.75.*

The author, a member of the British Ornithologists Union and a devotee of "wait and see photography" has spent hundreds of pleasant hours in a hide (blind) waiting for waders (shorebirds) to approach within range of his camera. Although primarily concerned with bird photography, Mr. Smith has filled his book with life histories information about his subjects and interesting personal experiences with them. He often makes us feel the excitement of trying to photograph particularly wary and rarely photographed shorebirds, and some of his descriptive scenes have all the author's warmth of feeling for them. Many of his experiences are amusing, and help characterize some of the 36 species of waders that are discussed throughout the book.

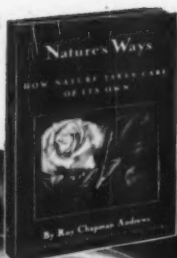
A supplement gives the measurements, plumages, descriptions, call notes, distribution, nesting habits and other useful data for each species. The numerous excellent bird photographs and three plates of waders in flight are practical aids to identifying these birds in the field. Anyone who is interested in bird photography will enjoy this book, and those who are planning a birding trip to Great Britain will find it a pleasant and useful guide to a particularly interesting group of British birds.

FIELD BOOK OF NATURE ACTIVITIES

By William Hillcourt, G. P. Putnam's Sons, New York, 1950. 4 1/4 x 7 in., 320 pp. Illus. with line drawings. Indexed. \$3.95.

The author, National Director of scoutcraft and Assistant Editor of *Boy's Life Magazine*, Boy Scouts of America, has had a long career in scouting and has written several of the basic manuals for scouts. In this excellent addition to the handy, pocket-size, Putnam series,

Continued on Page 268



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Books Received at Audubon House

- ALLEE, W. C., and others. *Principles of animal ecology*, W. B. Saunders Company, Philadelphia, 1949. \$14.00.
 ARMSTRONG, EDWARD A. *Bird life*, Oxford University Press, New York, 1950. \$2.50.
 BAKELESS, JOHN EDWIN. *The eyes of discovery: the pageant of North America as seen by the first explorers*, Lippincott, Philadelphia, 1950. \$5.00.

BARRETT, CHARLES. *An Australian animal book*, revised edition, Oxford University Press, Melbourne, 1947. \$4.50.

BOOTH, ERNEST S. *How to know the mammals. Picture-keys for determining species of all of the mammals of the United States and southern Canada with maps showing their geographic distribution*, Wm. C. Brown Company, Dubuque, Iowa, 1950. \$2.00.

CARSON, RACHEL L. *The sea around us*, Oxford University Press, New York, 1951. \$3.50.

CATER, RUTH COOLEY. *Tree trails and hobbies*, Doubleday, Garden City, New York, 1950. \$3.50.

CAYLEY, NEVILLE W. *Fairy wrens of Australia*, Angus and Robertson, Sydney, Australia, 1950. \$2.00. (Available through Ione Perkins, 1603 Hope Street, South Pasadena, California.)

COCANNOUER, JOSEPH A. *Weeds, guardians of the soil*, Devin-Adair Company, New York, 1950. \$2.75.

COLMAN, JOHN S. *The sea and its mysteries*, Norton, New York, 1950. \$3.75.

DUNCAN, WINIFRED. *Private life of the protozoa*, Ronald Press Company, New York, 1950. \$3.00.

DURHAM, OREN C. *Through my binoculars*, Review and Herald Publishing Association, Washington, D. C., 1950. \$2.75.

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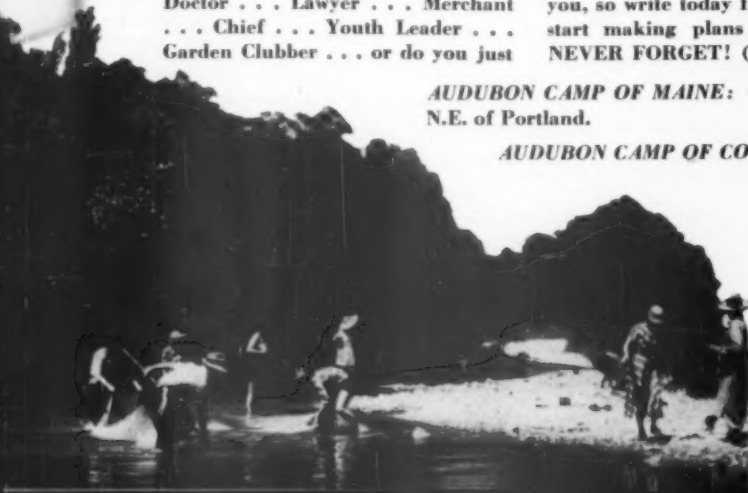
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- EARLE, OLIVE L. *State birds and flowers*, Wm. Morrow & Company, New York, 1951. \$2.00.
- ELLIS, JESSIE CROGT. *Nature and its applications*, F. W. Faxon Company, Boston, 1949. \$17.00.
- EVANS, BERGEN. *The natural history of nonsense*, Alfred A. Knopf, New York, 1949. \$3.00.
- EWAN, JOSEPH. *Rocky Mountain naturalists*, University of Denver Press, Denver, 1950. \$5.00.
- FITTER, R. S. R. *London birds*, Collins, London, 1949. 10s.6d. (\$1.47)
- FORMAN, JONATHAN. *Water and man, a study in ecology*, Friends of the Land, Columbus, Ohio, 1950. \$4.50.
- FOWLKES, JOHN GUY. *Elementary teachers guide to free curriculum material*, Educators Progress Service, Randolph, Wisconsin, 1950. \$4.50.
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- GALLET, ETIENNE. *The flamingos of the Camargue*, Basil Blackwell, Oxford, England, 1950. \$3.00. (Available through Macmillan, New York.)
- Garden Club of America, Conservation Committee. *Know your state*, New York, 1950. \$5.00.
- GERTSCH, WILLIS J. *American spiders*, D. Van Nostrand Company, Inc., New York, London, 1949. \$6.95.
- GRAFFAM, PERRY S. *Bird houses, feeders, baths*, General Publishing Company, 814 North Tower Court, Chicago 11, Illinois, 1949. \$1.00.
- HAVERSCHMIDT, FR. *The life of the white stork*, E. J. Brill, Leiden, Holland, 1949.
- JAEGER, EDMUND C. *A source-book of biological names and terms*, 2nd edition, Charles C. Thomas, Springfield, Illinois, 1950. \$4.50.
- JAEGER, EDMUND C. *Our desert neighbors*, Stanford University Press, Palo Alto, California, 1950. \$5.00.
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- LACK, DAVID. *Robin redbreast*, Oxford University Press, New York, 1950. \$4.00.
- LANE, FERDINAND COLE. *Story of mountains*, Doubleday, Garden City, New York, 1950. \$6.50.
- LEY, WILLY. *Dragons in amber; further adventures of a romantic naturalist*, Viking, New York, 1951. \$3.75.

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- LINCOLN, FREDERICK C. *Migration of birds*, U. S. Fish and Wildlife Service Circular No. 16, Government Printing Office, Washington, D. C., 1950. 30¢.
- LINDUSKA, JOSEPH P., and SURBER, EUGENE W. *Effects of DDT and other insecticides on fish and wildlife*, U. S. Fish and Wildlife Service Circular No. 15, Government Printing Office, Washington, D. C., 1949. 10¢.
- LOWTHER, E. H. N. *A bird photographer in India*, Oxford University Press, New York, 1949. \$5.50.
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- MURPHY, GRACE E. BARSTOW. *There's always adventure, the story of a naturalist's wife*, Harper & Brothers, New York, 1951. \$4.00.
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- RONCIL, RENE. *Bibliographie ornithologique francaise. Travaux publies en langue francaise et en latin en France et dans les colonies francaises de 1473 a 1944*, 2 volumes, Lechevalier, Paris, 1948-49. 3.200f fr.
- RUXTON, GEORGE FREDERICK. *Ruxton of the Rockies*, University of Oklahoma Press, Norman, 1950. \$5.00.

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SMITH, GUY-HAROLD. *Conservation of natural resources*, Wiley, New York, 1950. \$6.00.

SMITH, ROGER C. *Guide to the literature of the zoological sciences*, Burgess Publishing Company, Minneapolis, Minnesota, 1949. \$2.50.

SPAULDING, EDWARD S. *The quails*, Macmillan, New York, 1949. \$6.50.

STEFFERUD, ALFRED. *How to know the wild flowers*, Henry Holt and Company, New York, 1950. \$2.00.

URQUHART, F. A. *Introducing the insect*, Henry Holt and Company, New York, 1949. \$5.00.

VON FRISCH, KARL. *Bees, their vision, chemical senses, and language*, Cornell University Press, Ithaca, New York, 1950. \$3.00.

LETTERS—Continued from Page 208

Mirrors Around Picture Windows

Some months ago you published an appeal for ideas on how to keep birds from flying into picture windows and killing themselves. At that time, we quoted your appeal in a column the Albert Lea Audubon Society sponsors in our local newspaper.

Mrs. Hans Hansen of Albert Lea came to me with a plan her family has used, which she claims is quite effective. She says it was used long ago to frighten birds away from fruit trees.

They take the small mirrors that are furnished in women's purses, or similar ones, and drill a small hole through the center of each. These mirrors are then strung on fine wire which is suspended across the bottom, sides, and top of the window area. The flashing movement of the mirrors alarms the birds and seems to prevent them from dashing themselves against the windows.

This method would not be unsightly. Perhaps aluminum foil could be substituted for the mirrors. One of our Audubon members told of seeing aluminum milk bottle caps strung across a raspberry patch to scare away the birds.

MRS. J. H. KOEVENIG

Albert Lea, Minnesota

EDITORS' NOTE: *This seems to be a very practical suggestion and one that would be easy to carry out. We will appreciate hearing from our readers who experiment with this or other ideas for minimizing the sizable death toll of birds that collide with picture windows.*

A Release From Everyday Annoyances

I would like to take this opportunity to tell you how much I enjoy everything about *Audubon Magazine*. To me, it is like an adventure into another very pleasant world, making me forget everyday annoyances.

MRS. J. E. CROUSE

Willoughby, Ohio

Doctor's Prescription

Will place my copy of the *Audubon Magazine* on my reading table for my patients to read.

DR. WILLIAM W. SHENK

Minneapolis, Minnesota

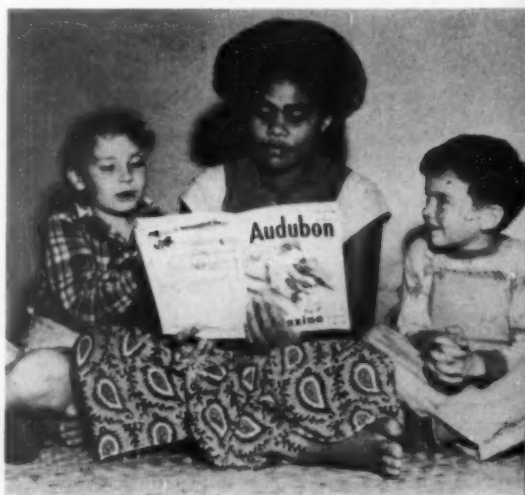
Audubon Magazine in Fiji Islands

The birds here are quite different from those that we have in the United States. The only ones that could be recognized offhand by an American are the various shorebirds, the barn owl, and the kingfisher. There are a few parrots on this island but more on Tavenuni to the north. We are photographing what we can but the weather is usually against us. If it isn't the weather, the birds hide in the jungle darkness where it is impossible to take them in color.

The pictures in *Audubon Magazine* appeal to our Fijian house girl as you can see. "Kata," our daughter (Clem, our son, is on the right), points out the western bluebird by Roger Tory Peterson, in the May-June 1950 issue.

DR. TELFORD H. WORK

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